

DG 1110-3-132

Design Guide

RECREATION

CENTERS

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Engineering Division
Military Construction Directorate
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FOREWORD

The Design Guide (DG) series has been established to replace selected material previously issued under the standard design medium by the Engineering Division, Military Construction Directorate, Office of the Chief of Engineers, U.S. Army.

This guide governs design of Army Recreation Centers. The Army program for Recreation Centers is contained in AR-28-1. Recreation Centers support the mission of the Army Recreation Services by providing professionally planned social, cultural, educational, amusive and information services which are responsive to the leisure needs of the Army community.

This guide states basic planning and design considerations, criteria, and spatial organization principles, and illustrates how the guidance can be applied to respond to different requirements. This guide is applicable to all new construction projects for Army Recreation Centers and projects involving modernization of existing facilities.

Detailed development of this guide was under the direction of the Special Projects Section, Structures Branch, of the Engineering Division. Major parts of the material contained herein are based on the results of an architectural services contract with the firm of Hartman-Cox Architects, Washington, DC, and their consulting firm, Environmental Research Group, Philadelphia, Pa., under Contract No. DACA-73-73-C-0007. The functional requirements in this guide have been developed in conjunction with, and approved by, the U.S. Army Recreation Services Office in the Office of the Adjutant General.

Distribution of this guide is limited. Additional essential copies are available from the OCE Publications Depot, 890 Pickett Street, Alexandria, Virginia 22304.

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CHAPTER 1

INTRODUCTION

1-1 PURPOSE

- a. **DESIGN.** This guide provides criteria to govern the design of Army Recreation Centers, and to aid in the evaluation of such designs. This guide is directed towards improving early design decisions and towards the development of realistic, cost-effective spaces in conjunction with the Army regulations and DOD criteria referenced herein.
- b. **PLANNING.** This guide is also intended to provide general guidance for using service personnel and Corps of Engineers field offices in planning facilities for inclusion in military construction programs.
- c. **IMPROVEMENT.** It is expected that using service personnel will find additional use for this guide in developing improvements or in better utilizing existing facilities.

1-2 SCOPE

- a. **APPLICATION.** This document is applicable to all new construction projects for Army Recreation Centers. It is also applicable as general guidance to projects involving the modernization of existing facilities.

While this is the basic criteria document for Army Recreation Centers, it is not intended to provide all of the information required for successful preparation of project designs. Additional information must be obtained from the unique requirements at the installation level which are associated with the general description of activities contained herein and the locational constraints and opportunities of the site.

- b. **CASE STUDIES.** Space allowances for Army Recreation Centers are defined in DOD 4270.1 -M, Construction Criteria Manual. For the purpose of this document, case studies are developed herein for three sizes of Recreation Centers (12,700 SF, 19,800 SF, and 27,800 SF).

1-3 REFERENCES

- a. **FUNCTIONAL NEEDS.** The following Army Regulation is important in understanding the functions of an Army Recreation Center:
AR 28-1 – Army Recreation Services
- b. **DOD CONSTRUCTION CRITERIA.** The following manual is important in understanding the basic criteria governing the planning and design of Department of Defense facilities:
DOD 4270.1 -M – Construction Criteria Manual
- c. **PROJECT PLANNING.** The following regulations are important in understanding procedures for planning facilities in conjunction with the development of Military Construction, Army (MCA) Programs:
AR 415-15 – MCA Program Development
AR 415-17 – Empirical Cost Estimates for Military Construction
- d. **DESIGN EXECUTION.** The following Army and Engineer Regulations are important in understanding execution procedures which must be considered in the design of facilities designated for inclusion in MCA programs:
AR 415-20 – Project Development and Design Approval
ER 1110-345-100 – Design Policy for Military Construction
ER 1110-345-700 – Design Analysis
ER 1110-345-710 – Drawings
ER 1110-345-720 – Specifications
- e. **COMPLETION RECORDS.** The following regulation is important in understanding the kind of records transferred to the using service upon completion of a project:
AR 415-10 – General Provisions for Military Construction

1-4 FORMAT

The format of this guide is intended to facilitate the development of project require-

ments and designs by allowing the user of the guide to apply these criteria to each unique, local situation.

Major principles and criteria are contained in five chapters: planning considerations; design considerations; individual space criteria; spatial organization principles; and illustrative designs of case studies.

a. **PLANNING AND DESIGN CONSIDERATIONS.** These chapters will familiarize design personnel with Recreation Centers and design objectives; they will guide programming personnel in delineating functional requirements; they will acquaint the evaluation personnel and facility managers with the activities that take place in the Centers.

b. **INDIVIDUAL SPACE CRITERIA AND SPATIAL ORGANIZATION.** These two chapters will be the principal reference for design personnel, presenting them with detailed design considerations; the programming personnel will find detailed information to tailor a building program to an installation's local, individual needs; evaluation personnel will find the standards by which a project design can be evaluated.

c. **CASE STUDIES.** This chapter will help the design personnel establish design concept plans; to the programming personnel it will demonstrate possible design alternatives; it will help acquaint the evaluation personnel with Recreation Centers; it will demonstrate to facility managers how they might rearrange their own Centers more effectively. The case studies are not intended to be definitive designs since local variables will usually be too great to make this practicable. They do, however, represent possible applications of the criteria contained herein in the form of example programs and designs for different facility sizes involving hypothetical local situations.

1-5 EMPHASIS

a. **DESIGN QUALITY.** Emphasis shall be placed on the quality of architectural design since it vitally affects the longevity, economics, usefulness, efficiency, and attractiveness of a Recreation Center and its interior and exterior spaces.

b. **DESIGN SERVICES.** Architects for these facilities shall be selected on the basis of:

- A continuing experience in designing recreational facilities with similar functions and requirements.
- A demonstrated imaginative approach to building design that integrates design quality, functional efficiency, and cost control.
- Experience with modern, flexible construction systems.
- Efficient and well-managed project procedures and coordination with consultants,
- The ability to provide professional interior design services.

c. **USER INFORMATION.** Provisions related to the efficient operation and maintenance of the facility shall also be emphasized during design. Information to supplement project completion records should be prepared to instruct the using service on how to gain the most benefit from such provisions.

1-6 RESPONSIBILITIES

a. **USING SERVICE.** The using service for military construction projects is defined in AR 415-10, and its responsibilities are outlined in AR 415-20. The using service is responsible for:

- (1) Development of functional requirements in conjunction with the guidelines in this guide.
- (2) Justification of functional requirements falling beyond the scope of the guidelines in this guide.
- (3) Preparation and submission of the Project Development Brochure required by AR 415-20.
- (4) Obtaining installation action to gain site approval if the project is not sited in accordance with the DA-approved master plan.
- (5) Preparation and submission of DD Form 1391 and supporting data in accordance with AR 415-15.
- (6) Approval of concept designs to certify compliance with functional requirements.

b. **DESIGN AGENCY.** The Corps of Engineers field office responsible for design will:

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- (1) Insure that the functional requirements of the using service are incorporated into the project design.
- (2) Insure that the requirements of the using service fall within the scope of the guidelines in this guide.
- (3) Insure that all deviations from this guide requested by the using service are adequately explained in project design analysis.
- (4) Insure that the quality standards for overall design are emphasized as stated herein.
- (5) Insure that the assemblage of user information is complete at the completion of the project, and provided, together with completion records required by AR 415-20, to the using service.

CHAPTER 2

PLANNING CONSIDERATIONS

2-1 ARMY RECREATION PROGRAM

a. **GENERAL.** The mission of the Army Recreation Services is to increase the effectiveness of the Army by maintaining morale and physical and mental fitness by promoting maximum participation in planned and diversified activities. The Army Recreation Center program is one of seven core programs; the others are Arts and Crafts; Dependent Youth Activities; Library; Music and Theater; Outdoor Recreation; and Sports and Athletic Training. The Recreation Center program is intended to encourage the individual to try new activities that would stimulate creative thinking, motivate involvement in social functions, and enhance social skills in a relaxed and pleasant atmosphere by providing a wide range of recreation information and social services.

b. **OBJECTIVES.** The policy governing Army Recreation Services (AR 28-1) requires that the program adhere to several objectives; these standards have direct bearing on the planning and design of all Recreation Services facilities.

(1) *Diversity.* Programs must be varied to provide a freedom of choice and meet a wide range of ages, abilities, and preferences.

Design Implication: The Army Recreation Center should be designed to allow maximum freedom of movement and to support the many activities that occur simultaneously; there should be a diversity of spatial arrangements in which the activities can occur.

(2) *Relevance.* Programs must be contemporary, relevant, innovative, and tailored to incorporate new trends and interests.

Design Implication: The design must be adaptable to changing social values without extensive remodeling. The physical appearance must be contemporary and appealing.

(3) *Change of Pace.* Programs must provide a change of pace from duty environment.

Design Implication: The design must create a non-military atmosphere. The plan should allow maximum freedom for the user to behave with minimum restrictions.

(4) *Maximum Participation.* Local programs must provide and emphasize instruction in activities to stimulate maximum participation.

Design Implication: A successful design should reflect attitudes, interests and needs of the local military community. The responsibility for determining these needs rests locally, with the Recreation Center's staff and patrons.

(5) *Expanded Leisure Opportunities.* Participants must be introduced to new or unfamiliar activities as a means of broadening interests, skills, and knowledge in constructive pursuits.

Design Implication: The interior of the facilities should be open to encourage casual observation of activities in progress so that interest is sparked and participation is encouraged.

c. **PROGRAM COMPONENTS.** The Program of Army Recreation Centers is divided into four major components: Regular, Leisure Services and Resources, Special Interest, and Mobile Recreation Units. In addition to standard programming, there could be non-recreational events such as military organization observances, conferences, bloodmobiles, commander's calls, etc. Main Recreation Centers house all four components, while Branch Centers house only Regular and Special Interest components.

(1) *Regular Component.* This component consists of standard recreational activities such as dances, discussions, tournaments, films, shows, festivals; and self-generated activities such as games, cards, record and tape listening, and TV viewing.

(2) *Leisure Services and Resources Component.* There are two parts to this component

which occur at Main Centers only:

(a) **information/Tour/Travel (ITT)** is the centralized information office for on- and off-post leisure activities and recreational resources such as group tours, travel planning, and distribution of tickets for recreational activities.

(b) **Consultant Services** provide comprehensive social and supplemental consultant services and maintain liaison with appropriate military and civilian agencies for unit parties, military celebrations and anniversary observances, leisure counseling and referral, etc.

(3) **Special Interest Component.** This component provides special recreational activities that are of specific interest to the military community and special populations such as dependent wives' activities, discussion groups, classes, special events, and special interest clubs. These activities may continue over a long period of time and appeal to soldiers, their families, and other community members.

(4) **Mobile Component.** This component is a delivery system which takes Army Recreation Center Programs to personnel in remote areas such as units on field maneuvers, isolated work or housing areas without recreational facilities, and off-post sites. Recmobiles and vehicles which house the mobile program are administratively and logically supported only from Main Recreation Centers.

While certain activities are standard features of one of the previously mentioned components (for instance, a dance is a Regular component and chess club would be a Special Interest component), the Recreation Center Program is flexible in that one component may become involved with another (for example, the chess club may sponsor a chess night and social which would be part of the Regular component). The design implication of this is the requirement that the Center be planned to house a group of interrelated components which have a wide range of activities rather than a group of independent and separate components. To more fully understand these interrelationships, each of the components can be described along five dimensions which describe the purpose of the activities,

d. **PROGRAM DIMENSIONS.** One objective of the Recreation Center Program is to create opportunities for expanded individual and community social awareness and growth. This Program must respond to the military community's recreational needs by planning, executing, and evaluating activities that involve the patrons in the following dimensions:

(1) **Social**, by encouraging interpersonal relations and interaction;

(2) **Cultural**, by developing an awareness and appreciation of different heritages and civilizations;

(3) **Educational**, by providing instruction in new skills and abilities and developing known skills;

(4) **Amusive**, by providing enjoyment and relaxation; and

(5) **Service**, by providing service to individuals, the community, special populations, etc.

The matrices in Tables 2-1 and 2 demonstrate how a chess tournament and a theme program, "2001 . . . Days of Future Passed," can involve the Center's patrons in each of the components and along each of these dimensions.

Another objective of the Recreation Center Program is to respond immediately to the community's needs by initiating activities as soon as an interest is expressed; as soon as the interest diminishes, that specific activity is dropped. To meet this need, the Program is characterized by a great deal of spontaneity within the framework of the components and dimensions.

In order to support the large degree of flexibility required in the social programming of the Center's activities, the design should incorporate a wide range of spatial configurations in which a variety of activities can occur. These spaces should be planned and designed according to the needs of the Program components in relation to the full range of Program dimensions rather than establishing separate spaces for each component related to a single dimension.

To be successful, the design of these spaces must specifically support the range of activities that will take place within it; incompatible

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Table 2-1. Activity Matrix for Game Example.

COMPONENTS		Specific Activity: CHESS TOURNAMENT		DIMENSIONS		
		SOCIAL	CULTURAL	EDUCATIONAL	AMUSIVE	SERVICE
LEISURE SVCS	REGULAR	tournament awards ceremony	display hand-made chess sets	speaker: benefits of nat'l/internat'l competition	exhibition for on-looking patrons	
	SPECIAL INTEREST	chess club meetings	Russian influence on game strategy	classes to improve skills	playing chess	teaching hospital patients how to play
	ITT	tour arrangements for local tournaments	tour museums/exhibits of chess sets	tour & lecture on chess strategy		tour state deaf & blind schl/teach children how to play
	CONSULT-ANT SERVICES	catering arrangements for awards banquet		arrange for club members to teach wives how to play	provide round robin exhibitions to NCO clubs	arrange intra-unit chess tournament
	MOBILE	conduct mini chess tournaments			game & tournament participation	teach basic skills to inner-city residents

Table 2-2. Activity Matrix for Theme Program Example.

COMPONENTS		Specific Activity: 2001... DAYS OF FUTURE PASSED		DIMENSIONS		
		SOCIAL	CULTURAL	EDUCATIONAL	AMUSIVE	SERVICE
LEISURE SVCS	REGULAR	dance w/ futuristic theme	program area decor reflecting advancing technology	film and discussion group: "Future Shock"	electronic games of future	invite participation by USO and local colleges
	SPECIAL INTEREST	science fiction club	sewing club exploring future fashion trends	space travel exhibits		multi-media presentations to local colleges
	ITT		tour planetarium & museum	disseminate information to community	tour participation	arrange transportation for guests
	CONSULT-ANT SERVICES	arrange refreshments during program	arrange space-age exhibitions			arrange refreshments for mobile units' programs
	MOBILE		mini-fashion show by sewing club	film/discussion group: "Future Shock"		use mobile unit to advertise programs community-wide

activities should be housed in separate spaces.

e. ACTIVITIES. The activities that take place within Recreation Centers can be classified as belonging to one of five major categories: administrative, large group, small group, refreshment, and transition. These activity classifications can be described in terms of function, number of participants, and frequency and duration of occurrence. Since changes in the using population will affect a Center's recreation programs, each Center should be flexibly planned so that different activities may be included if the local programs change.

(1) *Administrative Activities.* These activities consist primarily of control (the distribution of equipment, dissemination of information, and security); administration (paper work, consultation, and planning); ITT, (consultation, travel arrangements, paper work, and distribution of tickets); and in large Recreation Centers, special interest (planning, consultation, and paper work). Administrative activities occur daily during the total period of operation and involve 2-5 people, usually only the staff, either full-time, part-time, or volunteers.

(2) *Large Group Activities.* These recreational activities may include informal presentations, dances, films, important TV events, bingo, exhibitions, etc. These are planned events with organized control with a group size varying from 200 to 500 people. There may be as few as one event per week or as many as one or two per night. Large group activities of a non-recreational nature may include blood-mobiles, briefings, seminars, commander's calls, and the like. These activities usually occur during the duty day.

(3) *Small Group Activities.* These may be spontaneously generated activities such as TV viewing, record and tape listening, games, reading, writing, and conversing, as well as activities planned and executed by staff members, such as discussion groups, classes, etc. Group sizes can vary considerably from 1 to 4 for reading and record listening; up to 30 for card and game playing, hobbies, combo practice, meetings and small group programs; and up to 50 for special interest programs, TV

viewing, billiards, and pingpong. All these activities may occur daily with varying group sizes. Small group activities of a non-recreational nature may include meetings, small classes, discussion groups, etc. and usually occur during the duty day.

(4) *Refreshment Activities.* These activities occur in all Centers but their nature varies according to size and location of the facility. These activities are normally under the control of Army and Air Force Exchange Services (AAFES). In smaller Centers, these Exchange activities consist only of vending services; in larger Centers, food is prepared and served as well as consumed. Other refreshment activities provided by Recreation Center staff occur during dances, festivals, and unit parties. Also, refreshments may be served during meetings and special interest programs.

(5) *Transition Activities.* These involve entering, circulating through, and leaving the Center. Although these activities are individually generated and occur spontaneously, they are extremely important in planning and designing the Center to achieve its maximum effectiveness. To increase patrons' participation in and awareness of the Center's many activities, the patron should be able to observe, interact with participants, and become interested and involved in these activities while moving through the Center. The transitional activities serve to integrate the other activities with circulation into a unified program.

f. HOURS OF OPERATION. Hours of operation are normally when the majority of troops are off-duty, such as week nights, weekends, and holidays. This, however, will vary according to the unit's mission. The Centers may be open at other times for participation by non-military users and at posts where there is considerable night duty, if scheduling of the staff and resources permit.

g. USERS. The Recreation Center serves both enlisted personnel and other members of the military community including their families, DA civilian employees and retired military personnel. However, priority consideration is to be given to enlisted personnel and their bona fide guests.

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h. STAFF. Typical requirements for civilian staff may vary from Center to Center. The Center's staff is usually minimal in terms of the size of the Center and the number of participants. It is therefore necessary to locate the administrative area centrally to provide the necessary control of the Center and to have maximum contact with the users. Additional staff, either volunteers, part-time employees, or military personnel may be used to direct various programs.

Table 2-3. Civilian Staff Requirements.

Personnel	12,700 SF Center	19,800 SF Center	27,800 SF Center
Center Director	x	x	x
Program Director	x	x	x
ITT Director		x	x
Special Interest Director		x	x
NCOIC	x		x

2-2 PLANNING THE ARMY RECREATION CENTER

a. GENERAL. Before a Recreation Center can be planned, the Center's personnel and patrons must analyze their needs. From this analysis a suitable environment can be determined which is supportive of both the Center's programs and the users' activities. This planning analysis must be accomplished at a local level. The aspects of the analysis which are pertinent to the space planning and design of the Recreation Center should be recorded in the Functional Description of Project Development Brochure, Part 1 (TM 5-800-3) as detailed in 2-2c.

b. PLANNING FACTORS.

(1) *Typical Gross Areas.* This guide presents typical spatial requirements to meet Department of Defense space allowances as outlined in DOD 4270.1-M, Construction Criteria Manual.

Table 2-4. Authorized Space Criteria Related to Enlisted Strength.

Total Enlisted Strength	Gross Square Footage
501-2000	12,700 SF
2001-4000	19,800 SF
4001-5000	27,800 SF
5001+	Provide additional Branch Centers

These allowances represent gross areas (net plus 25%) which include space for functional requirements, structure, circulation and building service facilities. They do not include mechanical equipment space for heating and air conditioning.

(2) *Local Conditions.* Factors such as tenure of the installation, military population to be served, accessibility and capabilities of nearby communities to provide recreation, climatic conditions that affect recreational activities, and the impact on the morale of the troops must all be considered.

The using population and nearby recreation resources in surrounding civilian communities must also be analyzed; these are "local" conditions which affect planning.

(a) Significant differences in recreational planning are generated by the range of unit missions. An example of this is the distinction between trainees and permanent party personnel. The two groups demonstrate wide differences in age, maturity and commitment which affect their use of the Recreation Center. The trainee, away from home for the first time, has a tendency to be undisciplined in leisure, has few responsibilities beyond the requirements of basic training, and is comparatively restricted to the installation. In addition, training schedules often tend to restrict the use of Recreation Centers to weekends. Permanent party people, on the other hand, have their own transportation and more free time, and therefore tend to leave the base on weekends (especially if it is located near an urban center or tourist facilities), using the Recreation Center primarily during the week.

(b) The Recreation Center serves all members of the military community; various population groups will have different leisure needs. Depending on the population profile of the installation, the Center may be totally oriented toward the single person or strongly family oriented to include programs for dependent and retired personnel; all must accommodate a diversity of activities that appeal to various groups of people.

(c) The presence or lack of recreational activities in nearby civilian communities affects the planning of Army Recreation Centers. In the former instance, it may either draw people away from the Center or increase participation in special interest activities, such as skiing; in the latter instance it will increase the soldier's dependence on the Center to provide leisure programs.

(d) The geographic location of an installation will affect the nature of the programs offered, especially if it is located near a large urban area; this tends to orient a Center toward week night activities.

(3) *Local Programs.* Another factor that should be considered in planning the Recreation Center is the type and variety of programs that occur there, as well as the number of participants in these activities. If a Center holds a few large group activities, it may be advisable to plan the Center with a group of multipurpose spaces that can be opened into a larger space when required. The popularity of a particular activity may require that its space be enlarged. Therefore, the planning should evolve around the recreation program of that particular installation. However, this does not mean that new programs should not be considered or that the recreation program will remain the same and not change.

(4) *Flexibility.* Each facility should be planned to allow considerable flexibility in meeting the changing leisure needs of the soldiers. Needs change as tastes and preferences change (e.g., dancing style); as new programs are made available (ITT); and as technological advances are made (e.g., electronic games, rear projection TV). Although not all changes can be predicted, a successful facility should be

responsive to innovation and supportive of the on-going activities rather than feature statically predetermined spaces and featureless non-determined multipurpose space.

c. DETERMINING FUNCTIONAL REQUIREMENTS

(1) *General.* In accordance with AR 415-20, the local using service is responsible for completing the Project Development Brochure Part 1 (PDB-I). In order that the local needs are communicated to the designers, the planners should develop an outline for inclusion in PDB which addresses the five factors listed below; the purpose of this is to modify or supplement the design guidance herein rather than duplicating it.

(a) *General orientation of the local program* which is a description of what is to be accomplished by the local recreation program. This orientation should be in the form of problem statements or issues which are believed to have significant impact on the design of the facility.

(b) *Description of recreation programs and services* that are offered at the Center and potential future programs.

(c) *Description of activities* that will take place in the Center including how many people are involved (minimum number, average number, maximum number); how often the activities occur; how long they last; what equipment and furniture are required; where the activities normally occur; what special features are required to support the activities. All of this description should be related to specific issues defined in the general orientation.

(d) *Description of the relationships between activities*, such as which activities can happen in the same space; which activities interfere with others and should be separated; what the requirements for visual control are.

(e) *Establishment of priorities* should be developed at this point, since it is likely that the proposed recreation program cannot be achieved within the economic and construction parameters of the project; the using agency should develop priorities for each activity that

is to be housed, based on the necessity of inclusion.

(2) *Individual Space Criteria Review.* After the activities have been systematically described, the individual space criteria (Chapter 4) should be consulted to determine the project's size and design considerations. If local program needs are not met by these standards, they can be modified to tailor the program to meet local needs,

(a) If changes in sizes of spaces are required, new sizes can be determined from the unit space allocations that are noted under each area.

(b) Changes in equipment can be noted as to the new equipment required.

(c) Changes in design considerations can be developed by a diagrammatic or verbal description.

(3) *Spatial Organization Review.* Spatial organization requirements are described in Chapter 5. The using agency should review the matrix in this chapter to determine adjacency or spatial affinity requirements. If local conditions differ, these should be noted. Next the using agency should review the diagrams in Chapter 5 and the schematic spatial arrangement diagrams in Chapter 6 to determine which pattern meets their needs most closely. From this, a spatial arrangement diagram can be developed or identified specifically in response to local conditions.

(4) *Project Development Brochure.* To fill out the functional requirements part of PDB-1, the using agency should use the items delineated under paragraph 2-2c(1) as the "Functional Description of the Facility." Technical information required to complete the "Functional Criteria" part can be found in the appropriate chapters of this guide. The spatial arrangement diagram would suffice as the required floor plan to demonstrate functional flow. Assistance, if required, may be obtained through the District Engineers Offices.

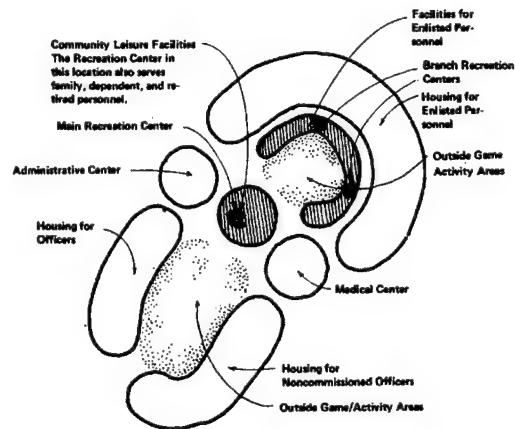
2-3 SELECTING THE SITE

a. LOCATION.

(1) *General.* Since there are significant

functional differences between Main Recreation Centers and Branch Centers, site selection criteria differ accordingly. However, the primary requirement for each Center is the proximity to the users.

(2) *Main Recreation Centers.* Because the Main Recreation Centers serve the married personnel and their dependents, DA employees, and retired personnel, as well as single enlisted personnel, the primary consideration for siting Main Recreation Centers is proximity to other leisure activities which can attract participants, lend specialized support, and help develop a complex of facilities for the military community. These leisure facilities, including the post exchange, motion picture theater, GED Center, and other recreational facilities, should be grouped together in an area equally accessible to everyone on the installation and be on a main thoroughfare.



Diagrammatic land use plan showing housing for officers, N. C. O.'s, and enlisted personnel in relation to supporting facilities and the installation core consisting of the Administrative Center, the Medical Center, and Community Leisure Facilities, which include the Main Post Recreation Center.

Figure 2-1 Diagrammatic Installation Land Use

(3) Branch Recreation Centers. Branch Centers are specifically oriented toward single enlisted personnel. Therefore, these Centers should be integrated with troop housing. Depending on the physical layout of the installation, it may be more desirable to have two small Branch Centers rather than one large Main Center. Since Recreation Services activities are not incorporated in the brigade bachelor housing complexes and it is reasonable to expect to be able to walk to these facilities, they should be grouped together with other leisure and unit activities, enabling a person to do several things on a single trip. Grouping these activities together also allows them to be mutually supportive. The relationship between the Recreation Center and enlisted personnel is best when one Branch Recreation Center, sited with other Recreation Services activities, serves a two brigade area. This allows people their choice of relaxing with people from their own unit or from another.

(4) Circulation Systems. The sites for both Main and Branch Centers should be visually prominent from the vehicular and pedestrian movement system.

b. UTILITY REQUIREMENTS. To be adequate, the site must have utility capacity equivalent to those listed in Table 2-5. There will be variations in requirements because of climatic factors and the final design of the building.

Table 2-5. Required Site Utility Examples.

Utilities	12,700 SF	19,800 SF	27,800 SF
	Center	Center	Center
Electric (kw)*	163	259	380
Water (gal/day)	2,500	3,960	5,560
Sewage (gal/day)	1,875	3,000	4,125
Heating (central) plant MBTU (0°F DB outside temp. (design condition)	700	1,070	1,500
*If there is no air conditioning, deduct (kw) 75 120 160 95° F DB and 78° F WB outside temp. (design condition)			

c. SIZE AND SHAPE OF SITE. The shape of the site should be compact to assure an efficient, economic and attractive building layout and should be in one piece, undivided by through-traffic lanes. The topography of the site should provide good natural drainage and require minimum cost to develop.

Table 2-6. Site Acreage Requirements.

Minimum Size of Site:	12,700 SF Centers	19,800 SF Centers	27,800 SF Centers
	2.0 acres	2.75 acres	3.25 acres

d. MASTER PLANNING. Site selection shall be in accordance with the approved installation Master Plan. The arrangement of facilities on the site should be integrated with other buildings and site conditions. Existing traffic patterns and capacities should be investigated so that the new facility can be located without causing undue congestion.

e. SITE IMPROVEMENTS. After the site has been selected, an analysis of improvements required to make the site usable for a Recreation Center must be made so that cost estimates may be developed. To assist the using agency in developing requirements and cost estimates, the local Facilities Engineer Office should be contacted to provide professional assistance. The analysis must include all site work and encompass the following:

- Extension of all utilities, electric, water, gas, sewers, to the building.
- Construction of sidewalks, curbs, and gutters.
- Landscape improvements including clearing, grading, and planting.
- Construction of outdoor terraces, parking areas, walks, and paving.

The analysis should be documented in the Project Development Brochure and the costs should be the basis for costs shown on the Military Construction Project Data Form (DD Form 1391). To insure that adequate funds are appropriated, this analysis must consider all aspects of site improvements, especially landscaping and construction, so that an attractive and usable Center is designed.

CHAPTER 3

DESIGN CONSIDERATIONS

3-1 DESIGN OBJECTIVES

All design aspects should be studied with respect to economics, functional requirements, and local conditions, but particular emphasis should be placed on architectural design, especially the interior and exterior attractiveness of the facility. Measures taken to meet design objectives should be documented in the Design Analysis prepared in accordance with ER 1110-345-700.

a. **DESIGN QUALITY.** Excellence of architecture is the primary design objective, for the Recreation Center's atmosphere will determine its usefulness as a place for relaxation. The design should be informal, open, contemporary, and comfortable; it should promote spontaneous social interaction, permit a number of activities to take place simultaneously, and express the nature of the activities taking place.

b. **FUNCTION.** The second design objective is to provide a functional facility that meets the requirements of the installation's Recreation Center program. The design should be flexible to accommodate changes in recreation programs, activities, and the community's attitudes about recreation needs.

c. **ECONOMY.** The third objective is to provide an effective facility at the most economical cost and least adverse environmental impact. To do so, the design must be determined by studies that use cost, values, and functional and social benefits to analyze engineering, economic and environmental decisions. These studies should also investigate the use of local skills, stock products, and new materials and techniques to reduce costs. Life-cycle cost analyses should appraise initial costs, operating and maintenance expenses, and replacement costs over the life span of the Recreation Center.

3-2 DESIGNING THE SITE

Site planning and design must be accomplished

in accordance with the approved General Site Plan and applicable portions of DOD Manual 4270.1-M, TM 5-822-2 and 3, TM 5-830-1 and the completed Project Development Brochure for the individual project. Site analysis will provide the bases for decisions about building orientation, building configuration, and landscape design.

a. **SITE ANALYSIS.** A thorough examination of site conditions is required for concept and final design development and should include the following types of information:

(1) *Climate data:* temperature, precipitation, prevailing winds, humidity, solar orientation and micro-climatic factors of the site which modify climate patterns such as the effect of topography and structure on wind patterns.

(2) *Topographic information:* contours, water table, drainage channels, natural features.

(3) *Soil data:* underlying and visible geological features, soil analyses.

(4) *Ecological description:* type, location, and condition of trees and vegetation, cover, local ecological factors such as pollution sources,

(5) *Man-made features of surrounding area:* location, size and scale of buildings, utility lines, road patterns, pedestrian paths.

(6) *Visual and aesthetic factors:* views, outstanding natural features, sounds, and movement.

b. **BUILDING ORIENTATION.** Based on the site analysis and master plan, the building must be oriented on the site to conserve energy, protect the environment, capitalize on natural beauty, function with street patterns, movement systems, surrounding buildings, and be aesthetically pleasing.

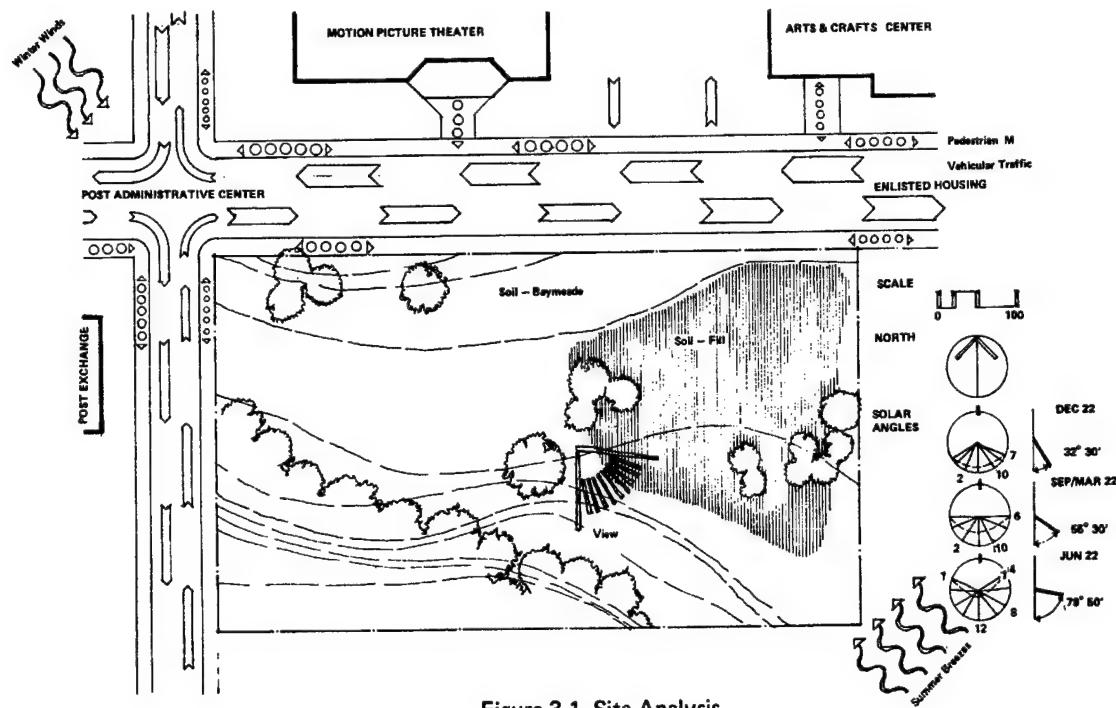


Figure 3-1 Site Analysis

(1) **Energy Conservation.** The primary consideration for building orientation on the site must be the conservation of energy and increased comfort of both outdoor and indoor recreation areas. The effects of orientation on energy conservation are more fully explained in paragraph 3-5a.

(2) **Surrounding Site Elements.** The next consideration is to capitalize on attractive surroundings and views by orienting the building toward them. Also, its physical relationships to other facilities and movement systems should enhance its effectiveness by drawing people toward it, making it part of a unified community center.

(a) Topography can determine suitability for building locations, parking areas, outdoor facilities, and paths. The design should require a minimum of grading, preserve the

natural character of the site, and take into consideration the natural drainage system.

(b) Trees, outcropping of rocks, ground forms, and water should be incorporated into the site design. This preserves the natural beauty of the site and installation as well as enhances the design quality of the Center.

(c) On-site vehicular and pedestrian movement must be considered as part of the total circulation system of the installation. The objectives of pedestrian movement are safety (by reducing pedestrian-vehicular conflicts), convenience of walking to the Center, continuity with other paths, comfort and ease of walking, and attractiveness. The objectives of vehicular movement are safety of ingress and egress from the site, the prevention of congestion on installation roads, and ease of parking, service, and fire protection.

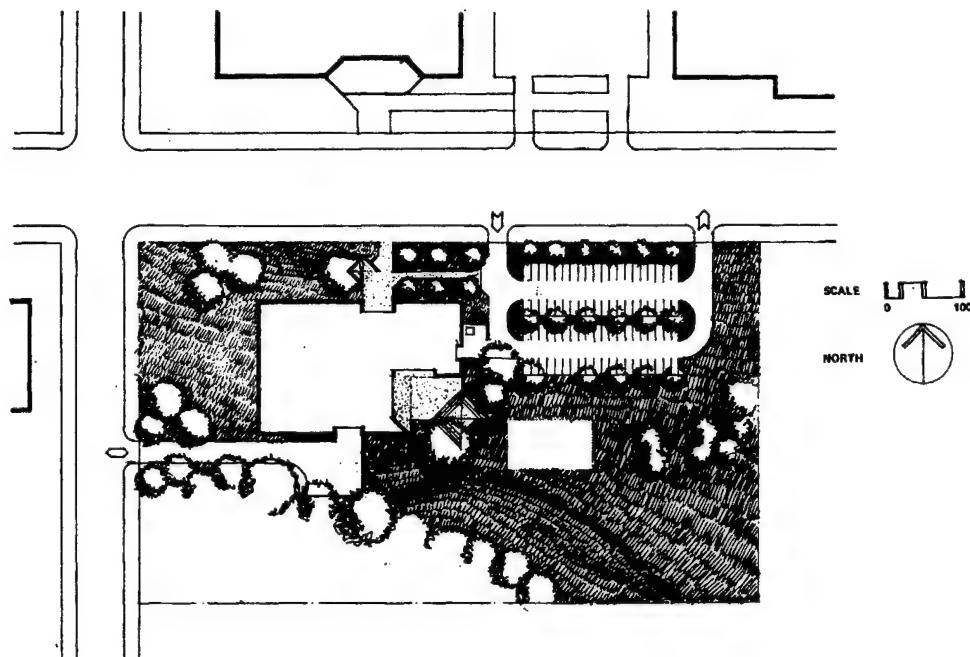


Figure 3-2 Site Design

c. LANDSCAPE DESIGN,

(1) *Functional Areas.* The site should be developed to provide outdoor relaxation and have appropriate landscape planting that defines and enhances areas and activities. A stepped terrace (like a small amphitheater), seating areas for various size groups, an area for tables and barbecue, and a covered terrace should be provided. An outdoor game area should be developed a safe distance from the building for croquet, shuffleboard, pick-up volleyball and horseshoes.

(2) *Planting.* Planting design will consider selection of plant materials which will be readily obtainable, easily maintained and compatible with the surrounding environment. Sizes of plants should be adequate to give some immediate effect. Landscape planting plans will be prepared. These plans will be executed as part of the base bid.

(3) *Grading.* Over lot grading will be established to provide positive drainage at a minimum 2% grade. Normally a 5% grade for 10 feet will be provided away from the building. Road alignment and overall grading will be designed for optimum preservation of existing ground forms, drainage patterns and tree cover to avoid excessive earth movement consistent with functional requirements.

(4) *Site Plan Requirements.* Site plans must show, as a minimum, floor elevations, existing and finished grades, existing and proposed buildings, roads, parking and utilities in the immediate project vicinity, outside utility connections, existing vegetation, proposed lawns and planting masses, and solar orientation.

(5) *Utility and Service Features.* Placement of exterior utility and service features that might detract from the over-all appearance of

the facility should be held to an absolute minimum. Where conditions dictate placement of the service items in exposed locations, effective screening should be employed.

3-3 DESIGNING THE BUILDING

a. **ARCHITECTURAL CHARACTER.** The Center's image of informality can be conveyed by a variety of unstructured open spaces in which spontaneous activities can occur and through which organized group activities can be viewed. Long narrow corridors, static and fixed spaces, and institutional color schemes should be avoided in both the architectural and interior design schemes. The Center's physical design should have a dynamic, contemporary aesthetic to complement the Center's primary user, the young, single enlisted man.

b. **FUNCTION.** Functionally, the design must increase the users' awareness of the activities taking place in order to involve them in new leisure pursuits; develop flexible space arrangements to support a variety of activities and group sizes; promote social interaction among the users; and establish a coherent plan which enables the user to circulate freely throughout the building.

(1) *Transition.* To increase the users'

perception of the many activities taking place simultaneously, the space normally used for circulation should be treated as transitional space, from which activities can be observed while moving through the Center. This transitional space should be designed with small, open lounges which would enable informal groups to form while waiting for events to start or rooms to be free.

(2) *Acoustical Zones.* Because many recreational activities are acoustically incompatible, they must not be located adjacent to each other. The establishment of a hierarchy of noise-generating activities will lead to the development of physical separation requirements. The activities that generate a low level of sound (card playing, conversing, TV viewing) should be housed in totally or partially open spaces. Meetings, hobbies, refreshment, and large group events all produce a moderate level of sound and require a moderate degree of separation from other activities; they should have enclosed spaces with no special acoustical treatment. Music practice, pingpong, electric games, and billiards all generate a considerable amount of sound. These should be separated from quiet areas and placed in enclosed space with acoustical treatment.

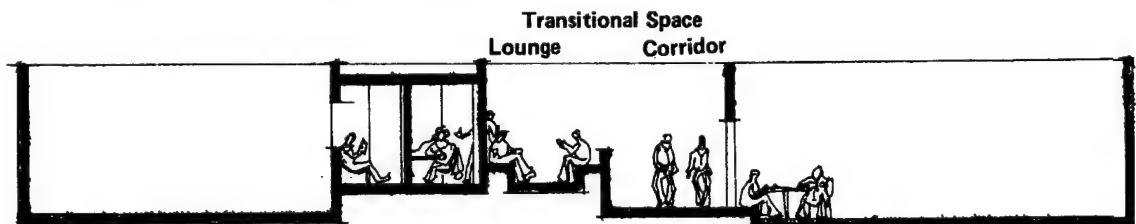


Figure 3-3 Transitional Space

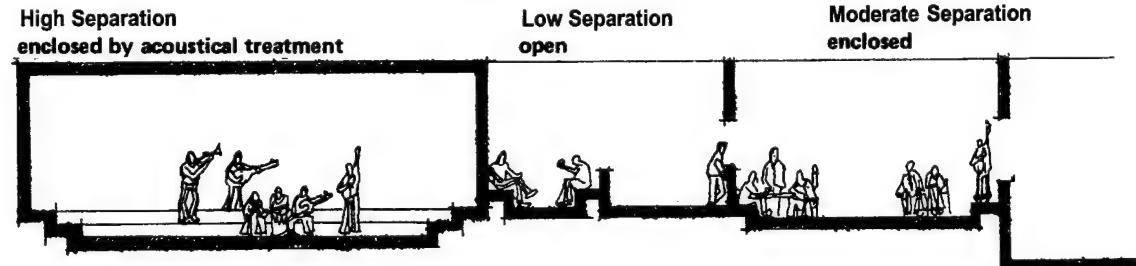


Figure 3-4 Acoustical Zones

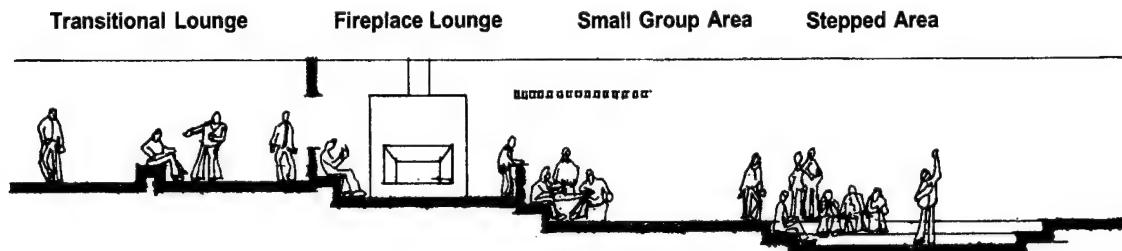


Figure 3-5 Adaptability of Large Group Activity Area

(3) Adaptability. The third functional consideration is that the facility be adaptable. For example, the large group area may not house large group activities on a daily basis; it must be adaptable for small group activity use. The space should be divided into a series of interrelated smaller spaces through the use of level changes, half-height partitions, dropped ceiling panels, focused lighting, and lounge alcoves. The stepped-down design also develops better sight lines to the platform during large group presentations.

(4) Space Use. Because there are a number of activities which involve the same group size but require different design considerations, overlapping space usage should be based not only on similar group size but also on similar activity requirements.

c. LOCALE FACTORS. Two major locational concerns affect the building design — the immediate site surroundings and the regional location of the installation. The Recreation Center design should complement the scale, materials, and configurations of its neighboring

buildings, while remaining unique and contemporary. The design should reflect the physical/cultural traditions of the installation's geographic location. Consideration of building form, configuration, roof slopes, and construction materials will not only aid in developing the Center's aesthetic character; it will also aid in conserving energy, since many building traditions are based on controlling the climate without mechanical means.

d. TECHNOLOGICAL CONSIDERATIONS.

(1) Design Coordination. The Recreation Center's prime technological concern is the construction of an economical, well-built, and attractive building. There must be, however, coordination between the building's technology and the design which supports its functions. A number of design factors will influence the engineering system design. The structural design must unify both long span and short span systems, occurring over large group and small group spaces respectively. If exposed structural members are part of the design, they must be coordinated into the design to provide a

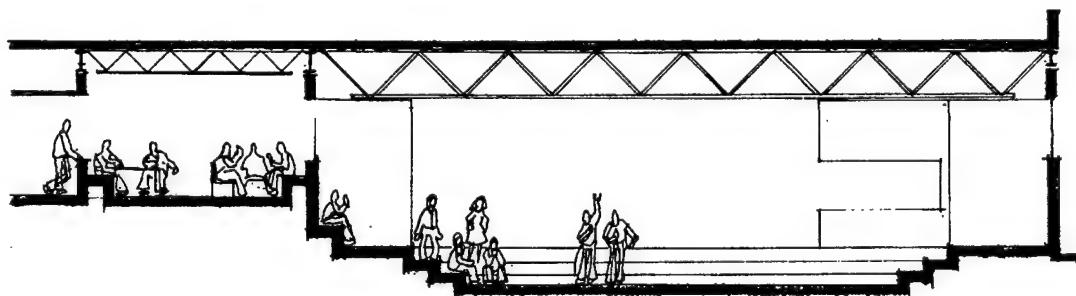


Figure 3-6 Coordination of Exposed Structural Members

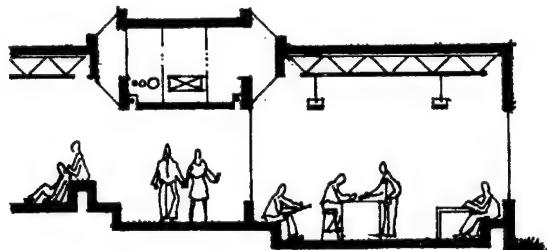


Figure 3-7 integration of Mechanical and Electrical Systems with Architectural Design

pleasing appearance. Although the open planning of the facility permits flexibility in the mechanical system, it must be developed with the lighting and structural system into a unified feature of the design composition. Consideration should be given to the use of standardized construction and mechanical systems such as pre-engineered structural components and pre-fabricated plumbing systems to economize on construction costs. All technological decisions should be influenced by cost-effectiveness, availability of materials and equipment, labor conditions, and suitability for the climate.

(2) Structural Systems.

(a) Design Loads. Structural design loads and criteria will be in accordance with Chapter 6 of DOD 4270.1-M and TM 5-809-1 to 6 and TM 5-809-8, 9 and 11 as applicable. Seismic design shall be in accordance with TM 5-809-10. The design analysis will be prepared in accordance with ER 1110-345-700.

(b) Costs. The structural system and features selected for construction drawings will be that system which is the most economical and suitable based on comparative cost studies for the building involved. Comparative cost studies will be made for the three most apparent competitive systems and will take into account mechanical, electrical and other features where they vary between systems under study.

(3) Plumbing System.

(a) Plumbing will be in accordance with TM 5-810-5 and DOD 4270.1-M. Specifications will be in accordance with the CE 300 series.

(b) Gas fittings as required will be in accordance with TM 5-810-6.

(c) Water supply facilities as prescribed in TM 5-813-5 and TM 5-813-6 will be provided. The specifications shall be in accordance with CE 500 and CE 501.

(d) Sanitary sewers shall be as prescribed in TM 5-814-1 and the specifications will be based on CE 500 and CE 600.01.

(4) Mechanical System.

(a) Heating, ventilating, and air conditioning (HVAC) will conform to the applicable portions of DOD 4270.1-M and TM 5-810-1. Heating and air conditioning load calculations will be in accordance with the procedures of the latest ASHRAE Handbook of Fundamentals. The "U" values for exterior walls, ceilings and floors will be in accordance with DOD 4270.1-M.

(b) In the design of the HVAC system, variable air volume, multi-zone, dual duct, terminal reheat, a combination of the systems and any other suitable systems in the current ASHRAE Handbooks will be considered. Within the design scope and environmental conditions required for various spaces, a life cycle cost study and an energy analysis will be made and the least energy intensive system will be selected. Results of the studies and reasons for rejection or selection of systems considered will be included in the design analysis. Energy

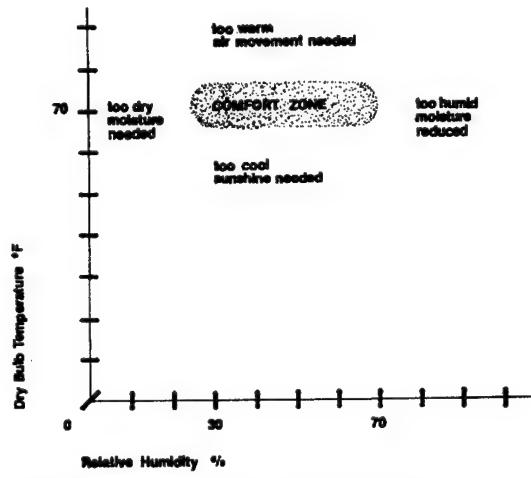


Figure 3-8 Diagrammatic Bioclimate Chart

recovery systems shall be investigated and will be incorporated if economical, based on life cycle cost study. The HVAC system shall be provided with automatic controls so that the system can be operated to conserve energy.

(c) Energy conservation measures will be in accordance with paragraph 3-5, Designing for Energy Conservation.

(d) Specifications will be in accordance with the CE 301 series.

(e) Proposed mechanical systems will be coordinated with the design of the fire safety system, and with the desired ceiling heights and other features of the architectural design.

(f) Air duct systems will be designed to minimize sound transfer through ducts, and floor installation of grills will not be permitted.

(g) Placement of exterior mechanical elements should be avoided so as not to detract from the overall appearance of the building. Where conditions dictate the placement of mechanical equipment in exposed areas, effective screening should be employed.

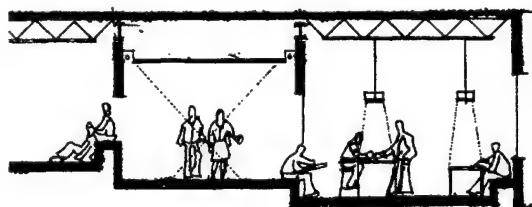
(4) Electrical Systems.

(a) Light levels specified in Chapter 4 are based upon minimum IES standards and analysis of the activities within the space.

(b) Electrical design will conform to DOD 4270.1-M and TM 5-811-1 through 4.

(c) Electrical symbols will conform to MIL STD 15-3.

(d) Specifications will be in accordance



Lighting levels for tasks should be brighter than background which in turn should be brighter than general surroundings and circulation space.

Figure 3-9 Variety of Light Levels

with the CE 303 series.

(e) To assure adequate primary capacity, a survey will be made on the existing primary distribution system which will serve this project.

(f) Primary electric service will be underground from the nearest pole or manhole to a pad mounted transformer(s) located outdoors as close to the load centers as practicable. Secondary electric service from transformer(s) will be underground. Service and distribution equipment will be of the circuit breaker or fusible switch type, and branch circuit panelboards will be of the circuit breaker type.

(g) System characteristics will be selected to provide for the most efficient and economical distribution of energy in accordance with Chapter 7, DOD 4270.1-M.

(h) Relamping facilities and accessibility of electrical equipment shall be considered in all designs. Provisions for adjustment and/or relamping of light fixtures which are not readily accessible shall be coordinated with the architectural design. Included in the design analysis is a determination of whether suitable maintenance facilities are available on-base and their identification. If suitable means are not available, an appropriate and economical means will be selected in coordination with the using service.

(i) Enclosed multipurpose spaces, special interest rooms, central program area, platform, pantry, and AAFES food service areas all have special power requirements necessary to support large music amplifiers, popcorn machines, appliances, etc. These requirements will be coordinated with the using service to insure adequate power to support unique Recreation Center program requirements.

(j) Electrical service will be provided to outdoor terrace areas for use in a variety of outside activities related to the Center. Special requirements for outdoor power will be coordinated with the using service. Exterior weatherproof outlets will be supplied from branch circuits having ground fault circuit protection.

(k) Illuminated exit signs and emergency lights will be provided for all emergency exits and passageways as required by the NFPA Life Safety Code No. 101.

(5) Communications Systems.

(a) The project design analysis must describe the communications systems requirements to include a statement reflecting coordination of such requirements with the local communications-electronics officer.

(b) A central program distribution system will be provided and will be designed to accommodate multichannel programming via tape and record media. The system will be complete with all required speakers, outlets, amplifiers and wiring, except that record turntables, tape machines, tapes and records will be provided by the using agency. Specific electrical requirements and equipment location requirements for turntables and tape machines will be coordinated with the using agency representative.

(c) An intercommunication system will be provided consisting of a master station in the control center capable of selective paging through individual loudspeakers in administrative offices, small group activity areas, special interest rooms, outdoor terraces and central program area. The master station will have volume controls, an input and output, and an all-call feature. Speakers will be of the flush-mounted type.

(d) A complete television antenna system will be provided. TV outlets will be located adjacent to convenience receptacles, both flush-mounted in the walls approximately six inches below the ceiling lines. Provisions will be made in the design for either wall or ceiling mounting of using-agency-furnished receivers, out of reach of patrons. TV outlets will be provided in all TV rooms and small group activity areas as well as the platform and fireplace lounge.

(e) One telephone outlet will be provided in each administrative work area and two outlets will be provided at the ITT desk and at the control desk. Outlets will also be provided in areas reserved for public telephones. Outlets and empty telephone raceway systems includ-

ing terminal cabinets will be provided in coordination with the local communication-electronics officer.

(f) Main telephone terminal cabinets will be in mechanical or electrical equipment rooms. Building telephone service will be underground.

(6) Fire Protection Systems.

(a) Fire protection will be as prescribed in DOD 4270.1-M, TM 5-812-1 and TM 5-813-6. Specifications for the fire alarm and evacuation signal systems shall be in accordance with applicable portions of CE 710.03. For critical areas requiring sprinklers, the system specifications shall comply with CE 700.

(b) The project design analysis must describe the fire safety system including the fire and/or smoke detection system, fire alarm and evacuation signal systems, and proposed fire resistance ratings for principal structural members. The analysis shall also reflect coordination of the fire safety system with the mechanical systems proposed for the project. Floor plans will be furnished with the analysis to show lines of measurement indicating the maximum distance from major activity areas to exit(s).

3-4 DESIGNING THE INTERIORS

a. **GENERAL.** Interior design features shall be coordinated with the architectural design as an overall scheme, whether they are furnished and installed as part of the construction contract or provided later by the using service. Graphic design and signage will be included as part of the overall interior design to identify activities and facilitate the Center's effectiveness. Requirements shall be coordinated with the using service and the installation.

(1) **Cost.** The cost of all items of equipment and furnishings which are permanently built-in or attached to the structure, as defined in AR 415-17, are normally considered part of the construction contract. Other items which are loose, portable, or can be detached from the structure without tools, are generally provided by the using agency under separate contract. Interior building surfaces, paint colors, floor coverings, window coverings as required,

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graphics and signage will be specified as part of the construction contract in coordination with

the overall design. Furniture shall be identified for procurement by others.

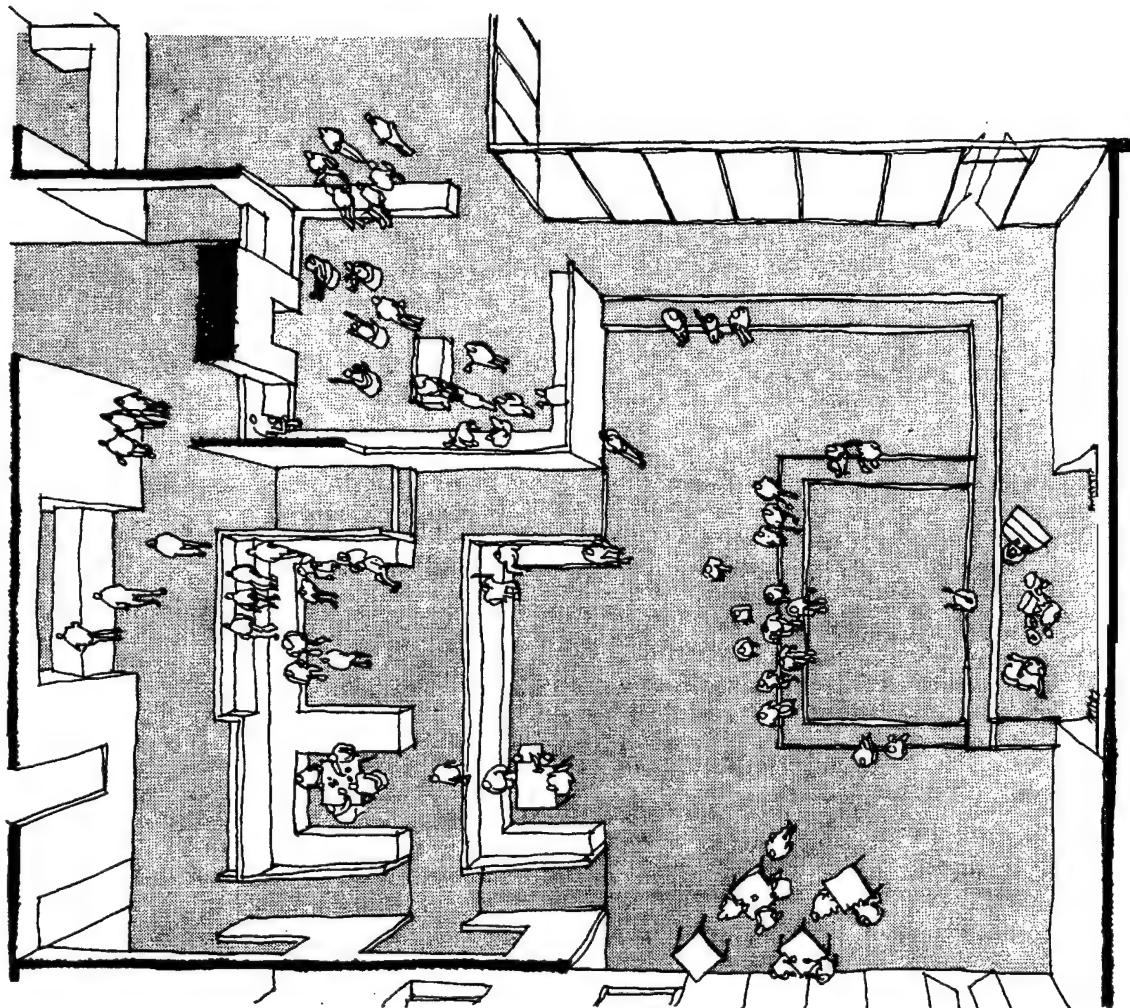


Figure 3-10 Subdivision Large Group Area into Small Group Activities

(2) Mandatory Sources. Mandatory sources for selection and procurement of furnishings are listed in the GSA Federal Supply Schedules, the Federal Prison Industries Schedule of Products and the General GSA Stock Catalog. Procurement by the using service from these sources is mandatory insofar as the items covered meet requirements. For items not listed in the mandatory sources above but which are part of the overall design scheme, appropriate guidance will be provided for procurement by the using service.

(3) Drawings and Schedules. Drawings and schedules concerning items not included in the construction contract must be provided in a format that can be readily issued to and be understood by installation personnel who are responsible for procurement, and personnel who are responsible for component placement and utilization after delivery. Display sheets consisting of placement plans, catalog illustrations, material/color samples and perspective sketches of typical spaces, together with procurement lists, source data and cost estimates will be developed as appropriate to accomplish this objective. Coordination between these drawings and schedules and the finish schedules under the construction contract must be evident.

(4) Character. The interior design must create an atmosphere in the Center that is most conducive to recreation and relaxation by being informal, colorful, cheerful, and contemporary. Because of constantly changing social values, the interior design should also permit redecoration with minimum cost and effort.

(5) Adaptability. Several interior design features should be considered to make the Recreation Center as adaptable as possible.

(a) The spatial division of large group spaces into small group areas with built-in seating, half-level partitions, and selective changes in level will encourage the use of steps as seats, landings as stages, and half-level partitions as podiums, permitting a range of multiple uses throughout the Center. Whenever level changes are used to subdivide spaces, the risers should never be higher than seven inches and the treads never less than eleven inches plus

one inch nosing. The nosing of each step must be clearly visible and not disguised by confusing patterns or poor and glaring light.

(b) The combination of built-in seating that defines the space and its activities with movable furniture that is flexible will permit an endless variety of arrangements that will encourage social interaction in an informal atmosphere.

(6) Sound Control. Sound control is an important consideration when selecting materials, finishes and furnishings. Carpeting is not only attractive; its capability to absorb sound and reduce impact noises is also the most cost-effective means of developing the proper acoustical environment. Insulation, sound absorption panels, and acoustical ceilings should be considered to reduce sound transmission.

b. MATERIAL AND COLOR SELECTION.

(1) Interior Finishes. Interior finishes shall be appropriate for the function of the building and spaces. Selection of materials should be based on their attractiveness as well as low maintenance qualities considering anticipated use, life cycle cost impact, fire and other safety requirements.

(2) Color. Use of color in Army facilities is limited to a practical number selected from the Federal Standard 595A, Colors. General guidance for color selection is provided in TM 5-807-7, Colors for Buildings. Colors should be used to stimulate human physical and emotional reactions and to enhance the overall functioning of the Recreation Center. Therefore the color scheme should be coordinated with the activities that will take place, considering the number of participants, the size of the space, and the amount of physical activity involved. High contrasts in hue and brightness and low contrasts in saturation are most appealing; these should be used in large group and transitional spaces. In smaller spaces, such as the carrels, the color schemes should be unified to reduce a sense of claustrophobia. Warm colors tend to increase physical activity and should be used in physically active areas — pingpong, dancing, etc. Cool colors are most effectively used for mentally stimulating

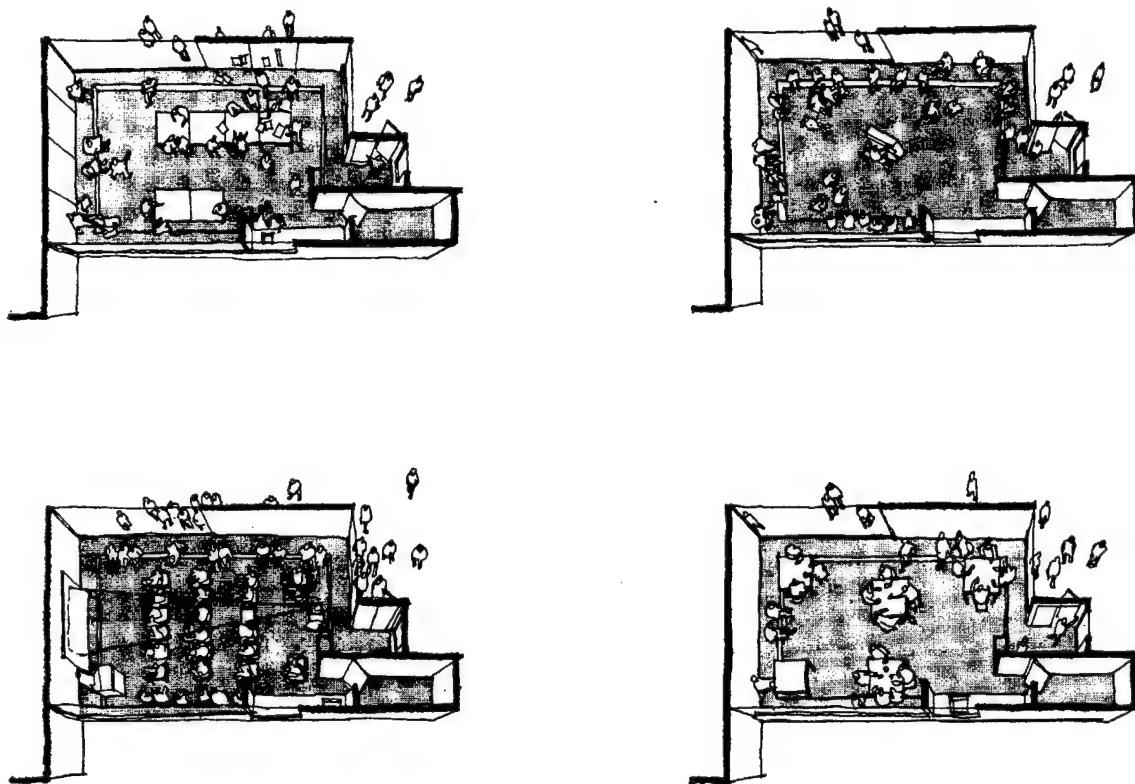


Figure 3-11 Use of Built-in and Movable Furniture

pursuits such as music practice, studying and meetings.

(3) *Interior Finish and Color Coordination.* Finish materials must be selected in conjunction with color selection. The color, texture, and pattern of materials should complement the overall design scheme and be in character with the desired image of the using service and the installation/command. Native (local) materials should be used to the greatest extent practicable. Long-life materials such as stones, tiles, woods, plastics, and vinyls should be selected to provide attractive colors, textures and patterns that will not quickly become out-dated.

(4) *Supergraphics.* Supergraphics, while

mainly decorative, should also incorporate useful information such as room numbers, directional indicators, Army insignia, and club identity. Care should be taken in their design so that they can be effective in livening up spaces and producing interest in large rooms or circulation spaces.

c. **SIGNAGE.**

(1) *General.* Signage requirements will be developed as an overall graphics system to identify spaces, provide directional information, and convey messages about control (no smoking, etc.). Detailed requirements of the using service will be coordinated at the local level. The system should assure maximum economy, ease of procurement and installation,

and standardization of application throughout the Recreation Center. It should also inhibit vandalism but be flexible enough to enable the addition or deletion of information. The signage system should incorporate the types of signs discussed below.

(a) *Facility Identifier Sign.* A facility identification sign should be located in the entry area oriented toward exterior pedestrian traffic. The sign should identify the building number and the facility. It may also indicate the hours of Center operation. Size of lettering and the exact location of the sign should be determined in each individual case in relation to the architectural design.

(b) *Activity Locator Signs.* A building activity locator sign should be provided in a prominent place in the entry area. The locator should identify and locate building spaces, key activities and personnel. Use of a graphic locator, such as a schematic building plan, should be considered.

(c) *Identification Signs.* Individual spaces should be identified either by number and name signs or pictographs. The signs should be located next to the door on the knob side.

(d) *Direction Signs.* Directions should be provided to highly used spaces such as the snack bar or out-of-the-way spaces.

(e) *Control and Safety Signs.* Messages to control the behavior of the patrons such as "No Smoking" or "No Food Permitted" must be used to convey messages to patrons in a friendly but firm manner. Since symbols and pictographs cause less resentment and opposition than if the message is conveyed in words, this type of sign should be used throughout the Center. Also, the locations of exits, fire protection and safety equipment should be strongly emphasized.

(f) *Notice Boards.* Notice boards help control clutter and can readily accommodate changing information. They should be used throughout the building wherever they will be most useful. A general notice board should be located in the entry of the Recreation Center. Smaller boards may be located next to

entrances of activity areas where there is a need to elaborate upon the type of activity inside or to give the names of participants and staff involved.

(2) *Sign Design.* Symbols tend to reduce the amount of signage required and are easier to assimilate than words. The use of symbols, pictographs, and wall graphics should be considered instead of words. However, if they are used, care should be taken in their design so that the information is communicated to and understood by the patrons. When words are used, a legible and attractive letterform, such as Helvetica Medium or Clarendon should be used. Letter sizes should be appropriate for the message and be coordinated as part of the overall design scheme. Signs should be located as close to eye level as possible and be illuminated to provide adequate comprehension.

d. **FURNITURE.** Furniture is an integral part of the overall design scheme, and will be closely coordinated with the selection of colors and finish materials for consistency in appearance and quality. Detailed requirements are covered in Chapter 4, Individual Space Criteria.

(1) *Durability, Comfort and Safety.* Careful attention must be given to all interior furnishings to insure that the type of furniture chosen conforms to standards of durability, comfort and safety, appropriate for the use they will receive. Being generally mobile, furniture items are subject to handling. Parts that receive the most wear should be replaceable, and finishes should sustain regular cleaning.

(2) *Mobility and Interchangeability.* Most interior furnishings should not be of a scale which would require more than two persons to relocate them, or be so complicated as to require an undue amount of time to assemble or disassemble. Whenever possible, care should be taken to choose multipurpose furnishings aesthetically suitable for a variety of needs and activities. Stackable and foldable furniture should be considered for reducing bulkiness in storage and transport where such requirements exist.

3-5 DESIGNING FOR ENERGY CONSERVATION

a. **BUILDING ORIENTATION.** To conserve energy, the building design must be responsive to the predominant climate, prevailing winds and sun angles.

(1) *Solar Orientation.* In a colder clime, reduction of heat loss is desirable; fenestration should concentrate on the southern exposure with minimal northern exposure. In a warmer clime, the prevention of heat gain is desirable; this should result in maximum fenestration on the northern exposure and minimum on the southern exposure.

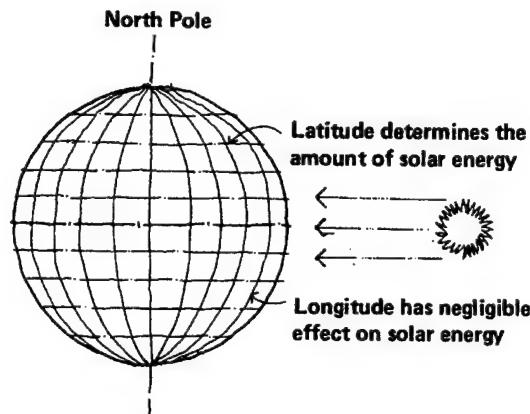


Figure 3-12 Amount of Solar Energy

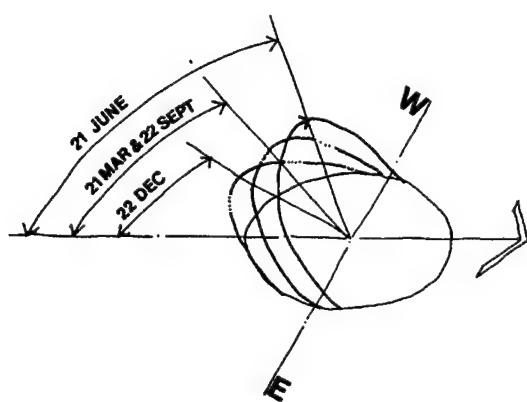


Figure 3-13 Sun's Path during Year

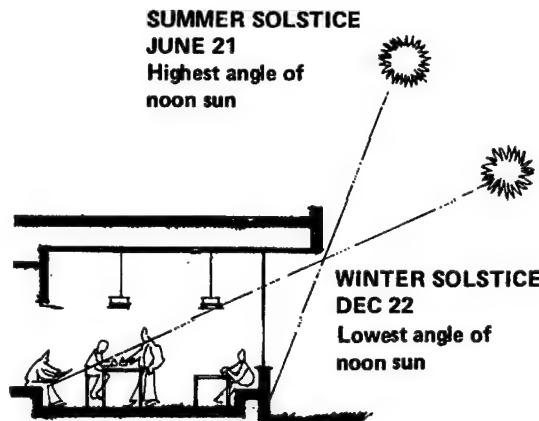


Figure 3-14 Solar Shading Devices

(2) *Prevailing Winds.* In cold climate, entrances and glazed areas should be oriented away from the prevailing winter winds. In warm climates the building should be oriented to allow maximum breeze penetration.

(3) *Solar Shading.* Solar controls should be planned to help achieve maximum energy savings. External shading devices are the most effective means of solar shading. Deciduous trees can provide shade in summer and penetration of sunlight in the winter; evergreens can protect the building entrances from winter winds.

b. **BUILDING ENCLOSURE.** There should be a high ratio of enclosed space to exposed building surface to minimize negative outdoor effects. in a warm climate the function of the building envelope is to prevent heat gain and to reflect solar heat; in a cold climate the function is to retain heat and to absorb solar heat; therefore, building materials should be selected accordingly.

c. **ENVIRONMENTAL SYSTEMS.** The ventilation system of the Recreation Centers should be planned to maximize use of natural ventilation, recirculate air where possible, and minimize use of outdoor air. System design should be based on ventilation zones and should be calculated at a 5% design condition rather than 1 or 2.5% weather condition.

Calculations should be based on the occupied hours with people, lights, and equipment taken into consideration.

d. **LIGHTING SYSTEMS.** Lighting design for Recreation Centers should employ task lighting in which specific areas are lighted according to the activity being performed; uniform lighting systems should be avoided. Natural lighting through the use of windows and skylights should be utilized to reduce dependence on electric lights, reduce heat gain, and accommodate the functional requirements for daylight and view. The use of dimmers should be considered to control the level of illumination as well as local switching of lighting.

ever, special emphasis should be placed on the design of Recreation Centers to accommodate the physically handicapped including provisions for stairs and ramps; toilet accommodations; drinking fountains; telephones; counter heights; corridor widths; entrances; and signage.

3-6 DESIGNING FOR THE PHYSICALLY HANDICAPPED

Since the Recreation Center is for the total military community which includes dependents, DA civilian employees, and retired military personnel, the likelihood is great that people who are physically handicapped will use the Center or will be employed in the Center. Therefore, the design of the facility must conform to Public Law 94-80 which was enacted to insure that "certain buildings financed with Federal Funds are so designed and constructed as to be accessible to "the physically handicapped," ER 1110-1-102, "Design for the Physically Handicapped" prescribes the necessary requirements. How-

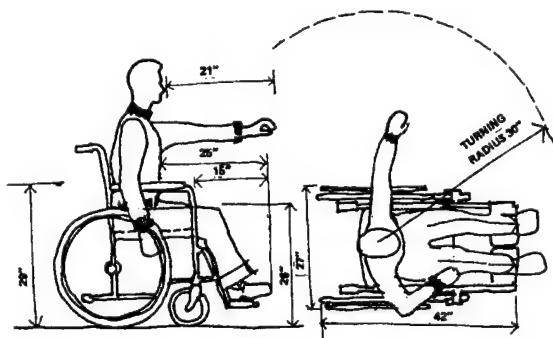


Figure 3-15 Dimensions of Man in a Wheelchair

CHAPTER 4

INDIVIDUAL SPACE CRITERIA

4-1 GENERAL

a. **CONTENTS.** This Chapter, which provides detailed information necessary in planning and designing Recreation Centers, is divided into seven paragraphs which correspond to the seven types of activities that will be housed in the facility:

- Transitional Activities
- Large Group Activities
- Small Group Activities
- Administration Activities
- Refreshment Activities
- Service Activities
- Outdoor Activities

b. **ORGANIZATION.**

(1) **Activity Groups.** The activity groups are presented in order of their importance to the functional and spatial design of the Center. For example, the Transitional Area is presented first because the single most important spatial consideration is the movement of people through the Center, not only movement to a desired activity, but movement past other activities and other people, encouraging the broadest possible range of participation in activities and social interaction.

The Large Group Activities are presented next because the central program area is the largest single space in the Center, dominating its overall character and housing the most diverse group of activities.

The Small Group Activities are discussed next, and divided according to their size and requirements for enclosure.

(2) **Individual Spaces.** Individual space descriptions within each activity group are arranged according to sequential use of information in the design process, starting with general information which affects planning and conceptual design issues to specific, detailed criteria used in design development.

Various categories of information are then presented about each space, including the following:

- **Function**, or the purpose of the space and the activities it houses
- **Participants**, or the characteristics of the users
- **Size**, or the overall area of the space and the unit areas which comprise the space
- **Relationships**, or the requirements for proximity to or remoteness from other activities
- **Design Considerations**, or the important physical features that support the function of the space
- **Technical Requirements**, or the guidelines for the environmental systems design and specify the performance requirements for each system within $\pm 2\%$ tolerance. The acoustical criteria is provided to guide the design of the other systems rather than as a requirement for a definitive acoustical analysis and design
- **Interior Requirements**, or the finishing of the space

c. **HOW THIS INFORMATION IS TO BE USED.** When planning Recreation Centers, this Chapter should be reviewed by the using service to develop a program suitable for local constraints and opportunities (mission, location, staff) by supplementing the functional requirements to accommodate local conditions. Supplemental requirements should be documented in the Project Development Brochure and be consistent with the general requirements of this guide.



Figure 4-1 **Transitional Activities**

4-2 TRANSITIONAL ACTIVITIES

a. CIRCULATION/LOUNGE AREAS.

(1) *Function.* To integrate circulation and individual activities into a unified whole by providing a variety of experiences that encourage casual interaction between individuals as well as transitory involvement and visual contact between activities.

Transitional area activities consist of circulating, casually observing Center activities by staff and patrons, casually conversing, viewing displays and exhibits, entering and exiting functional areas within the Center, storing books and coats in lockers, and moving heavy program props, musical and audio-visual equipment.

(2) *Participants.* A variable number of individuals and small groups of two or more.

(3) Size.

Overall
Approximately 15% of total floor area of the Center
Lounges
All Centers 100-150 SF

(4) *Relationships.* The transitional area is integrated with all Recreation Center activities and provides immediate access to all areas, except to the mechanical equipment room which must be entered from outside the building.

Lounges should be provided and located in alcoves adjacent to circulation and between adjacent activity areas to encourage sponta-

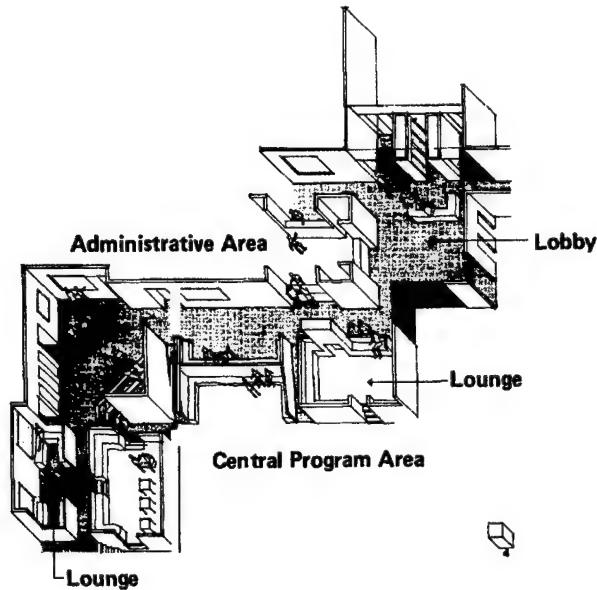


Figure 4-2 Circulation/Lounge Areas

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neous conversations among people meeting while circulating between activities.

(5) **Design Considerations.** Circulation paths through the building must be easily understood by the users, especially in large Centers so that the user can circulate without loss of orientation.

Long, straight corridor-like spaces should be avoided; widths and configurations should vary according to use patterns. Overflow areas should be developed at entrances to highly used spaces. Small lounges should be provided at these points and equipped to be used as waiting space, game areas, informal meeting places or music listening areas with headphones.

Those activities that do not require partitioning for acoustical privacy should be left open to the transitional area and be defined through the use of low partitions, changes in floor levels, changes in color and light intensity and built-in perimeter seating.

Lounges should be integrated with the mainstream of activity and designed to limit distractions, permit reading and music listening, and conversations.

Ramp access to all major spaces from the transitional area is required to facilitate the movement of heavy equipment and handicapped personnel.

Different colors and/or textures of floor materials should be used in conjunction with changes in ceiling and lighting treatments to introduce, interrupt, or reinforce movement to or from different activity areas.

(6) Technical Requirements

(a) Illumination

Level	20 ftc
Type	directional fluorescent
Control	centrally from control desk; emergency lighting

(b) Power

Outlets 1 per 50' length

(c) Plumbing

Drinking fountains (1 mtd for physically handicapped)

(d) HVAC

Summer 78°DB; 65°WB; RH 50%

Winter 68°

Air changes 6 per hour

(e) Communications

P/A 1 station per 100'

Sound 1 speaker per 100'

1 headphone jack and channel selector per 4' of seating
mtd 36" above floor

(f) Acoustics

Noise criteria PNC 35-40

Appropriate sound level 34-40 dB

Ave coef of absorption 0.30-0.40

Transmission (STC) +40 dB

Impact noise rating +5

(g) Critical Dimensions

60" minimum width ramps, 1' in 12'

(7) Interior Requirements

(a) Equipment

Ash urns, trash receptacles

(b) Furniture

Built-in lounge seating; information kiosks (provided by using service)

(c) Finish Suggestions

Walls painted drywall

Floors carpet

Ceiling acoustical tile

(d) Colors

Walls off-white

Floors warm accent colors

Ceilings white

Graphics primary accent colors

4-2 TRANSITIONAL ACTIVITIES (continued)

b. ENTRY/LOBBY.

(1) Function. To provide a controlled entrance to and exit from the Center in a congenial atmosphere which welcomes the visitor and encourages use of the Center. Also, to provide information about current activities and to orient the patrons to the spatial arrangement of the Center.

Entry/Lobby activities include entering and leaving the Center, casually conversing with others, seeking information about Center activities, milling about after events, or waiting for other people.

(2) Participants. Any number of individuals or small groups as well as large groups after central program presentations and at group meetings.

(3) Size.

Overall	
12,700 SF Center	250 SF
19,800 SF Center	400 SF
27,800 SF Center	550 SF

Space/Unit 2% of total floor area

(4) Relationships. Lobby should be adjacent to and visible from the control desk and ITT. There should be easy access to AAFES snack bar and vending area or amusement center, special interest, public toilets, and telephone area.

(5) Design Considerations. The entry should be easily perceived by potential users. It should therefore be prominently located on the main facade of the building, serving as its main visual

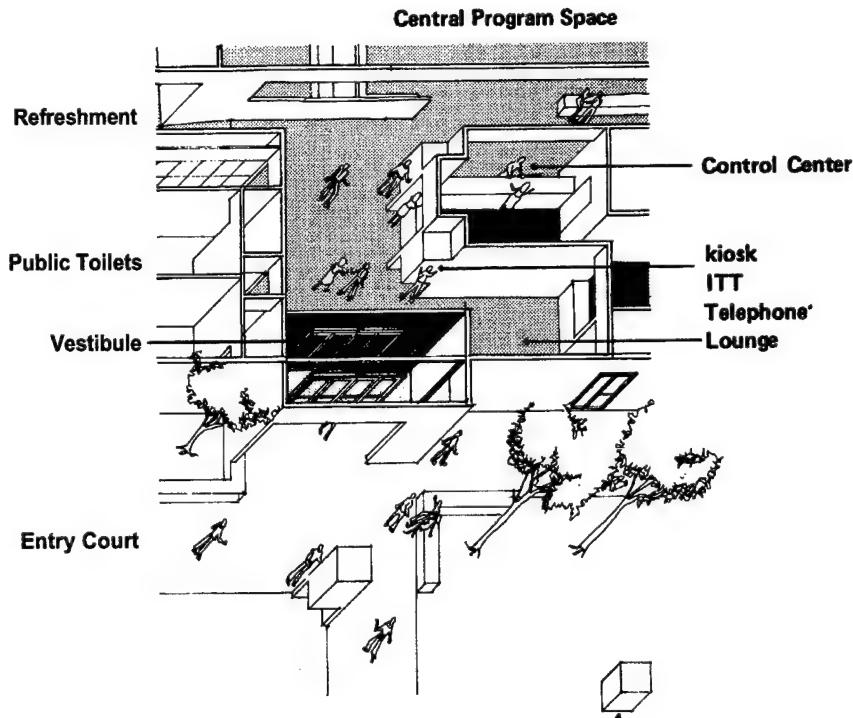


Figure 4-3 Lobby

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element. In order for it to be inviting to the users, it should be visually open and permit sighting of a number of activities upon entering.

Because some functions may be operating when the remainder of the Center is closed (e.g., AAFES snack bar or amusement center, special interest, ITT and public telephones), the lobby should be designed to permit access to these areas and the public toilets as well as restrict entry into other areas. The use of rolling screens mounted in the ceiling or walls and other attractive means of security which enable the Center to be visually open and have a welcoming appearance should be employed.

To conserve energy, the entry should be located away from prevailing winter winds. In cold climates, a vestibule should be used to prevent drafts.

Built-in informal seating should be available so that people may wait in the lobby in comfort. However, such seating should not interfere with movement into or out of the Center. Information about the physical layout of the Center must be provided to the visitor so that activities and programs may be located without confusion. The following graphic devices should be provided in a conspicuous and attractive manner: facility identification sign with hours of operation; activity location signs that identify activities and locate them on a schematic building plan; notice boards for future activities, off-post activities, and personal messages; and directional signs to locate highly used spaces as well as out-of-the-way spaces. In addition, there should be provision for kiosk display area (provided by using service) for presenting special information. Display kiosks should accommodate rearview projection (super 8 mm film and 35 mm slides) and self-contained tapes.

(6) *Technical Requirements*

(a) *Illumination*

Level	20 ftc
Type	directional fluorescent
Control	centrally from control desk; emergency lighting

(b) *Power*

Outlets	1 per 50' length
---------	------------------

Special 2 per kiosk in ceiling

(c) *HVAC*

Summer	78°DB; 65°WB; RH 50%
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Winter	68°
--------	-----

Air changes 6 per hour	
------------------------	--

(d) *Communications*

P/A	1 station
-----	-----------

Sound	1 speaker
-------	-----------

1 headphone jack and channel selector per 4' of seating
mtd 36" above floor

(e) *Acoustics*

Noise criteria	PNC 35-40
----------------	-----------

Appropriate sound level	34-40 dB
-------------------------	----------

Ave coef of absorption	0.30-0.40
------------------------	-----------

Transmission (STC)	+40 dB
--------------------	--------

Impact noise rating	+5
---------------------	----

(7) *Interior Requirements*

(a) *Equipment*

Ash urns, trash receptacles	
-----------------------------	--

(b) *Furniture*

Built-in lounge seating; information kiosks (provided by using service)	
---	--

(c) *Finish Suggestions*

Walls	painted drywall
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Floors	carpet; rubber mat in vestibule
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Ceiling	acoustical tile
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(d) *Colors*

Walls	off -white
-------	------------

Floors	warm accent colors
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Ceilings	white
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Graphics	primary accent colors
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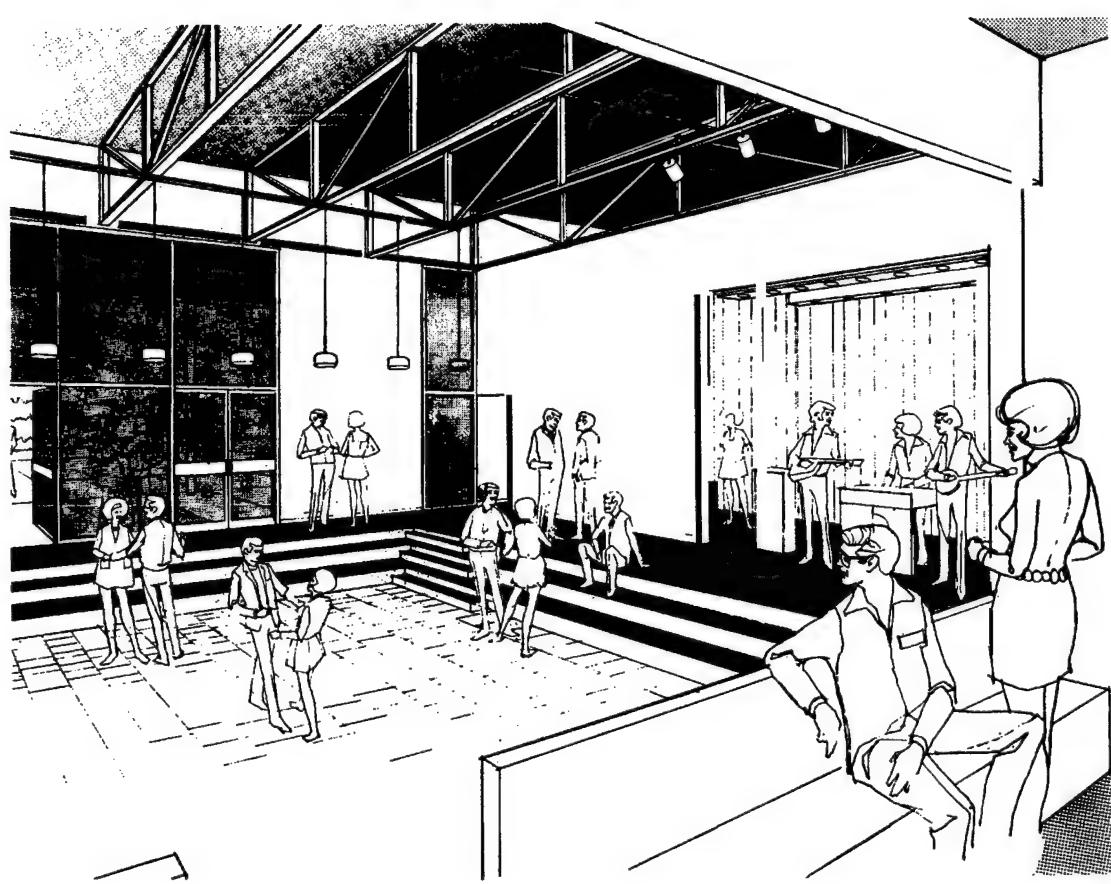


Figure 4-4 **Large Group Activities**

4-3 LARGE GROUP ACTIVITIES

a. CENTRAL PROGRAM AREA.

(1) **Function.** The central program area houses the following large group activities: dance events, festivals, exhibits, game activities such as bingo, informal entertainment presentations, short films, and large group TV viewing. When there are no large group activities scheduled, small group activities can be housed: card and game playing, eating and drinking, conversing and lounging. Also, non-recreational activities can take place in the central program area such as blood donation drives, commander's call, or graduation ceremonies.

These activities vary along three dimensions: total number of people involved; sizes of groups (can be one large group or a number of smaller groups); and focus of attention (central, as in

viewing a presentation, or diffuse, as in single participation activities).

(2) **Participants.** Small groups include participation from one to four people (involved in games, conversing, snacking, etc.); intermediate groups involve as many as 50 participants (viewing a special event or presentation); and large groups, comprised of as many as 500, whose focus may vary from that of a single group watching a performance, to couples dancing.

(3) Size.

Overall

12,700 SF Center 3,000 SF minimum
19,800 SF Center 3,760 SF minimum
27,800 SF Center 4,635 SF minimum

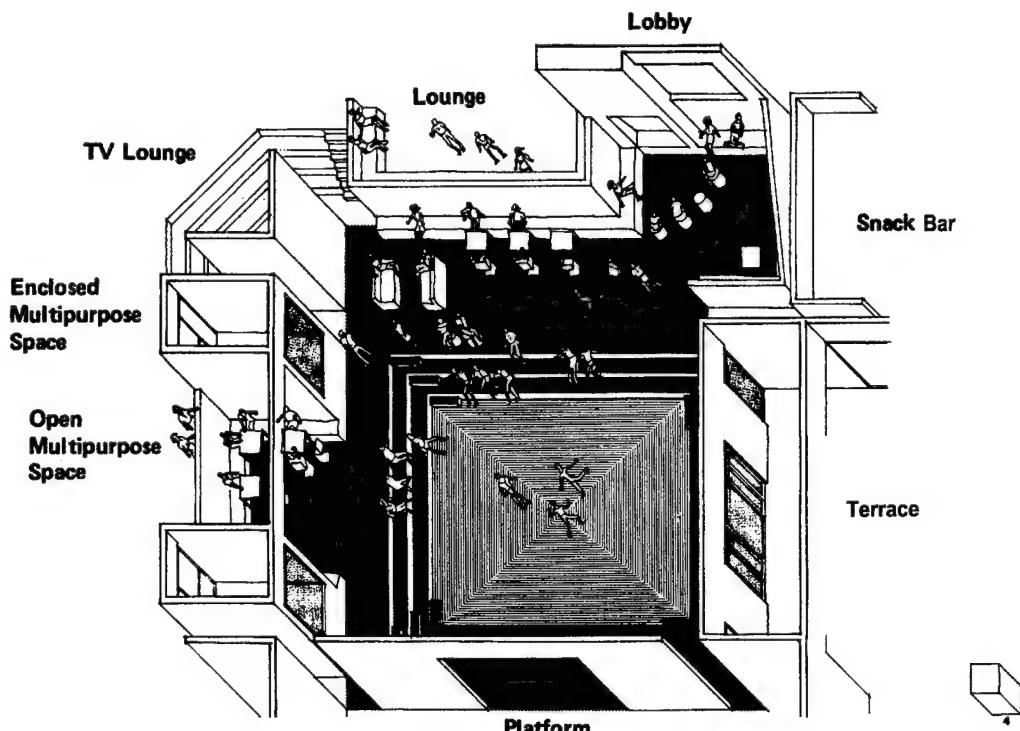


Figure 4-5 Central Program Area

Space/Unit

8 SF per participant: formal seating

12 SF per participant: table seating

15 SF per participant: dancing or active

(4) *Relationships.* The central program area should be encircled by compatible small group activity areas and should be immediately accessible to the following: pantry, terrace, eating areas, the control center, toilet rooms, and the storage area for tables and chairs.

However, it should be remote or acoustically separated from noisy activities such as pool, pingpong, electric games, combo practice and special interest activities that are disruptive to the central program area's special functions.

Because of the large numbers of people exiting from the central program area at one time, the transitional area at the central program area should form a lobby-lounge where people can mill about before going to another activity or leaving the facility.

(5) *Design Considerations.* The configuration of the central program area should allow overlap with other activity areas such as circulation, lounges, eating, small group activity rooms, platform and terrace. A variety of observation and entrance experiences should be created by the areas which overlook and project into the central program area. These activities should be exposed through the use of window openings, cutouts and railings in place of walls whenever a solid wall is not required for privacy or acoustical control. In addition, a fireplace lounge should be provided which is open to the central program area.

The central program area should be developed with several potential focal points in addition to a presentation platform; there should be a central, large area for demonstrations and exhibits. The seating areas should be oriented towards these foci.

The interior of the central program area should be as flexible as possible in order to accommodate the many activities taking place and the variable group size of the participants. No one area should be limited by function; for instance, the seating area should be flexible

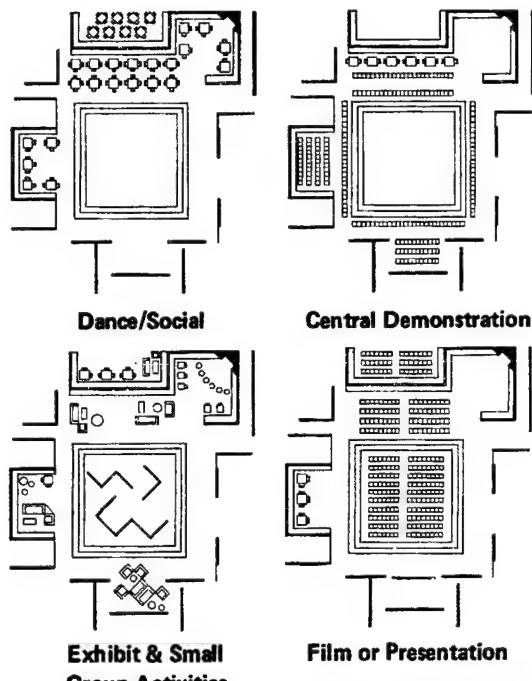


Figure 4-6 Central Program Area Alternative Use Plans

enough to allow activities other than large group viewing of a presentation.

Spatial variety should be developed through the use of stairs, half level partitions, changes in floor level and ceiling height, mezzanines (when practical). Ramps are a requirement to facilitate the movement of equipment and furnishings as well as handicapped personnel. The changes in floor level should also be planned to increase viewing angles and improve sight lines to the platform and central area.

(6) *Technical Requirements*

(a) *Illumination*

Level	Dancing	5 ftc
	Assembly	15 ftc
	Exhibits	30 ftc
General illumination in accordance with IES Lighting Handbook.		
Type	Pooled over activity areas	
	Adjustable track lighting – multi-circuit	

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Overall illumination	— fluorescent	(a) <i>Equipment</i>
Accent & display	— incandescent	Special effects & audio-visual equipment (provided by using service)
Special effects	— strobes, projectors (provided by using service)	Heavy duty drapery hardware for black-out drapes
Control	Zoned on separate dimmers House panel behind stage and control desk	(b) <i>Furniture</i>
Outlets	Wall mtd 18" above floor 25' o.c. Floor outlets (large group area only) every 200 SF Ceiling outlets — plug adapters in light track using spare circuit	Built-in lounge seating; stacking chairs; folding card and long tables
Clock	Stage — wall mtd 2'-0" below ceiling line	(c) <i>Finish Suggestions</i>
(b) <i>HVAC</i>		Walls painted or fabric-covered wall board
Summer	78°DB; 65°WB; RH 50%	Floor carpet, dance area — hard- wood
Winter	68°-70°	Ceiling exposed structure, painted
Air changes	15 per hour	(d) <i>Color</i>
(c) <i>Communications</i>		Walls off-white
P/A	1 station per 500 SF	Accent primary accent colors
Sound	1 speaker per 500 SF 1 headphone jack and channel selector per 4' of seating in lounge areas	Structure primary accent colors
TV	antenna jack in lounge areas	
Sound Reinforcement System	capability of 110 dB sound pressure level loudspeakers — central cluster above platform.	
(d) <i>Acoustics</i>		
Noise criteria	PNC 20	
Appropriate sound level	30 dB	
Reverberation time	1.6- 1.8 seconds	
Ave coef of absorption	0.10-0.20 ceiling 0.25-0.40 walls	
Transmission (STC)	+50-60 dB	
Impact noise rating	+5	
(e) <i>Critical Dimensions</i>		
Ceiling height	14' average 10' minimum 24' maximum	

(7) *Interior Requirements*

4-3 LARGE GROUP ACTIVITIES (continued)

b. PLATFORM.

(1) *Function.* The platform serves as a focus during large group activities and as supplementary seating during demonstrations or exhibitions in the round and as small group activity space for meetings, card playing, etc.

Activities consist of speaking to, performing for, or being watched by a large group; equipment being stored or received from outside; set construction and movement; scenery and prop preparation and storage; costume changes.

(2) *Participants.* Panelists, speakers, instructors, and large and small group performers to include dance bands, choruses, etc.

(3) Size.

Platform	Dressing	Storage	Loading	Recremobile
12,700 SF	Center			
750	200	300	100	
19,800 SF	Center			
750	250	450	100	
27,800 SF	Center			
750	300	500	100	300

(4) *Relationships.* Because of its functions, the platform is the focal point of the central program area and should be encircled by it, much the same way that the central platform area is encircled by small group activity areas.

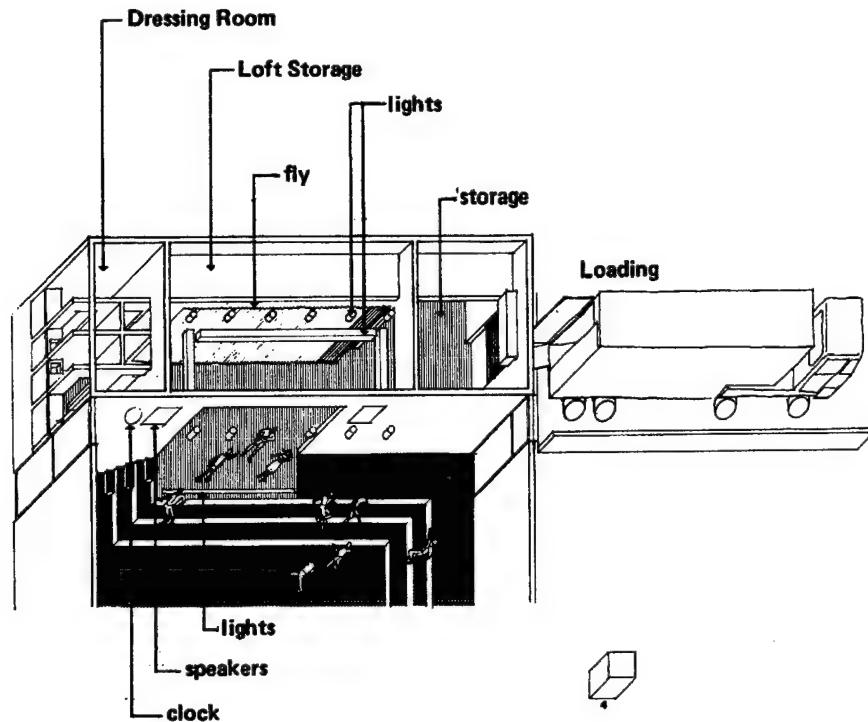


Figure 4-7 Platform

The platform should be located adjacent to, immediately accessible to, and on the same level as the following support activities: storage, loading and dressing rooms. Locate the dressing room toilets remote from walls adjoining the platform.

(5) *Design Considerations.* The platform should be planned as a thrust or open platform that projects into the central program area between 5 and 10 feet, so that it can be used in a traditional manner or in the round. The platform should be at least 3 feet above the floor of the central program area and should have surrounding steps that can be used for seating or presenting exhibitions.

The platform should be no less than 20 feet wide at the opening to the central program area to afford reasonable lines of sight to the presentation area.

The platform should accommodate a variety of uses, such as a platform for presentations, a forum for impromptu meetings, a lounge for casual interaction, and a setting for films and large screen TV presentations.

The levels adjacent to the platform should be used as an area for loose chairs and tables or as seats themselves.

Platform support areas include program prop storage, storage for stacking chairs and folding chair trucks, loft storage with access ladder for seasonal equipment, two dressing rooms and loading area.

In main Recreation Centers, an additional storage area with outside entrance for loading should be provided for Recmobile equipment. Recmobile storage requirements must include secure storage for miscellaneous audio-visual aids, program props, portable platform equipment, and musical instruments.

(6) *Technical Requirements.*

(a) *Illumination*

Level	general, 20 ftc; dressing rm mirror, 50 ftc
Type	indirect fluorescent
Control	local switching

Platform Lighting: (to be used for guidance only; requirements must be

coordinated with using service)

6 front spotlights, ellipsoidal reflector	250w
3 disappearing floodlights, 9 lamp,	150w
6 rear spotlights, Fresnel	150w
2 border lights, 8'; 16 lamps, 4 colors	100w
1 background 25',36" lamps, 3 colors	200w
2 work lights	200w

(b) *Power*

Special Outlets

1 connector strip 24' long
2 surface mtd outlet boxes
4 4-way floor pockets
1 wall receptacle, 2-way 50 amp

Outlets	1 wall mtd in dressing rm, 36" above floor
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(c) *Plumbing*

WC and lavatory for each dressing rm

(d) *HVAC*

Summer	78°DB; 65°WB; RH 50%
Winter	65°-68°
Air changes	15 per hour

(e) *Communications*

P/A	1 station in each dressing rm, 1 in storage
Phone	1 to control desk
TV	Antenna jack
Sound	Amplifiers and speakers as required by using service. See central program area for requirements.

(f) *Acoustics*

Noise criteria	PNC 35
Appropriate sound level	42 dB
Ave coef of absorption	0.15-0.25
Transmission (STC)	+45-50 dB

(7) *Interior Requirements.*

(a) *Equipment*

Electrically powered film screen
Electrically powered platform curtain
Fly and rear platform curtain

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(b) Furniture

Counter and mirror in each dressing rm

(c) Finish Suggestions

Walls painted exposed block or

drywall

Floors hardwood

Ceiling exposed structure

(d) Colors

Walls charcoal

Ceiling charcoal

Curtains primary accent colors

4-3 LARGE GROUP ACTIVITIES (continued)

c. PANTRY.

(1) *Function.* The pantry houses equipment for food preparation and service by Center staff to participants of large group activities or snacks for Center patrons; small cooking classes and demonstrations are also held here.

(2) *Participants.* Staff member or members, often assisted by non-staff people numbering up to eight.

(3) Size.

All Centers 250 SF minimum

(4) *Relationships.* The pantry should be immediately accessible to the central program area. It should be near the administrative offices and the control center.

(5) *Design Considerations.* The pantry should be planned to accommodate perimeter counters and appliances and a centrally located

service island, as well as the equipment listed in paragraph f.

One side of the room requires a serving window to the central program area to facilitate the distribution of refreshments.

(6) Technical Requirements

(a) Illumination

Level	50 ftc on counter surface; 30 ftc general
Type	direct task, fluorescent
Control	local switch

(b) Power

Outlets	1 every 12' mtd at 42" above floor 1 at freezer, refrigerator, ice machine, mtd 18" above floor
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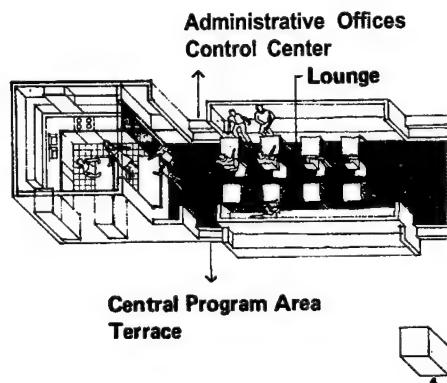


Figure 4-8 Pantry

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Special	clock outlet mtd 2' below ceiling Range outlet (220v); garbage disposal unit	(d) Colors
		Walls off -white Accent cool primary accent colors

(c) *Plumbing*

Ice machine
Double bowl, deep-well kitchen sink
Built-in dishwasher

(d) *HVAC*

Summer 78°DB; 65°WB; RH 50%
Winter 65°-68°
Air changes 8 per hour

Provide range hood and exhaust fan

(e) *Communications*

P/A 1 station
Sound 1 speaker station

(f) *Acoustics*

Noise criteria PNC 35
Sound level 42 dB
Ave coef of absorption 0.30-0.40
Transmission (STC) +43 dB

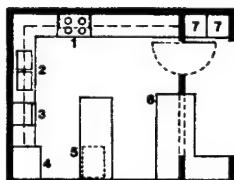
(7) *Interior Requirements*

(a) *Equipment*

Ice machine, coffee maker, popcorn machine, refrigerator, freezer, range, sink, disposer, dishwasher, wall and base cabinets

(b) *Furniture*

stools



1. Range
2. Double Sink
3. Dishwasher
4. Refrigerator/Freezer
5. Ice-Maker
6. Service Counter
7. Trash Receptacle

Figure 4-9 Pantry Equipment Layout

(c) *Finish Suggestions*

Walls	vinyl covered drywall
Floors	sheet vinyl or epoxy resin
Ceiling	acoustical tile

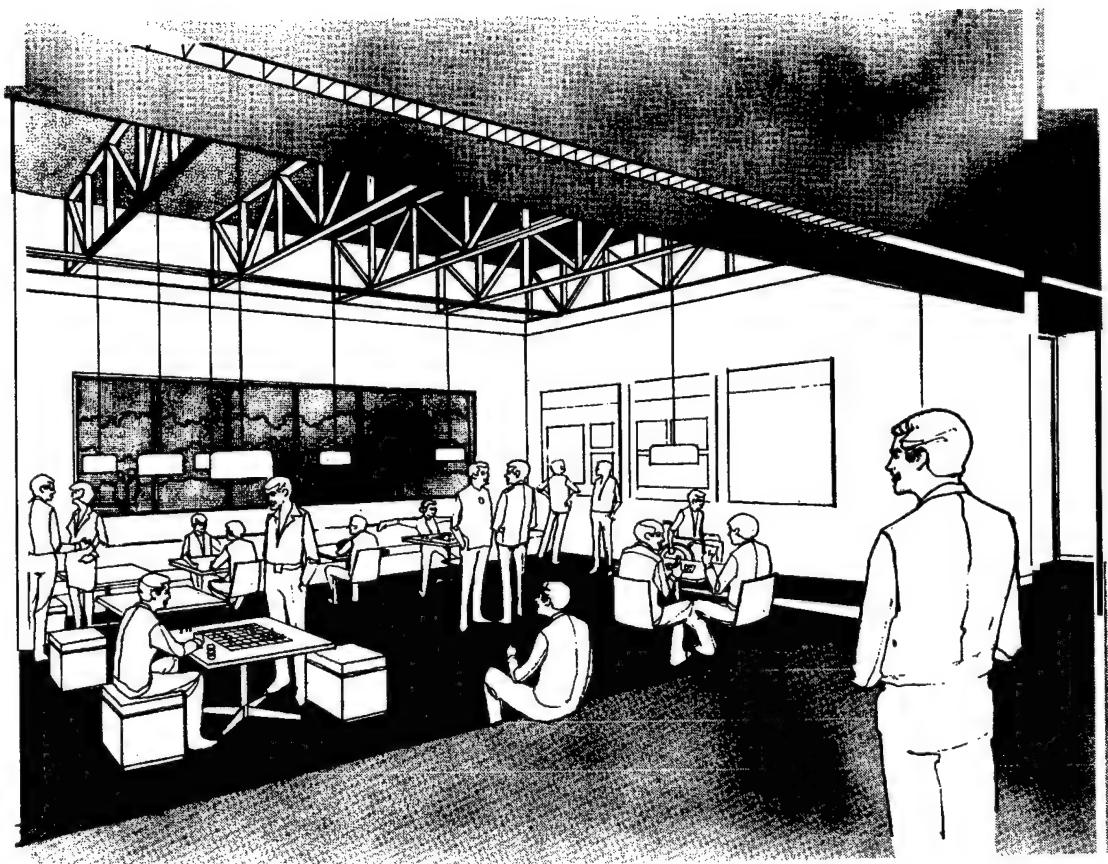


Figure 4-10 **Small Group Activities**

4-4 SMALL GROUP ACTIVITIES

a. ACTIVE GAMES AREA.

(1) **Function.** These areas house physical, active and noisy games. Those involved are either watching, waiting or participating in billiards, pingpong, shuffle board, air hockey, table soccer and electric games. Games are played individually or as part of a tournament program

(2) **Participants.** Two to five people per table. The number of onlookers varies.

(3) Size.

Overall

12,700 SF Center	1,500 SF minimum
19,800 SF Center	2,700 SF minimum
27,800 SF Center	3,800 SF minimum

This space will be divided into separate areas for billiards, pingpong, and electric games according to popularity and local equipment.

Space/Unit

Billiard tables (standard 9'x4'-6")	215 SF
Pingpong (9'x5' table)	250 SF
Electric games	vary

(4) **Relationships.** Locate activity near the control center for equipment distribution and surveillance.

Because food and drinks from the snack bar or vending machines are a source of damage to the equipment, locate pool tables and electric games away from these areas.

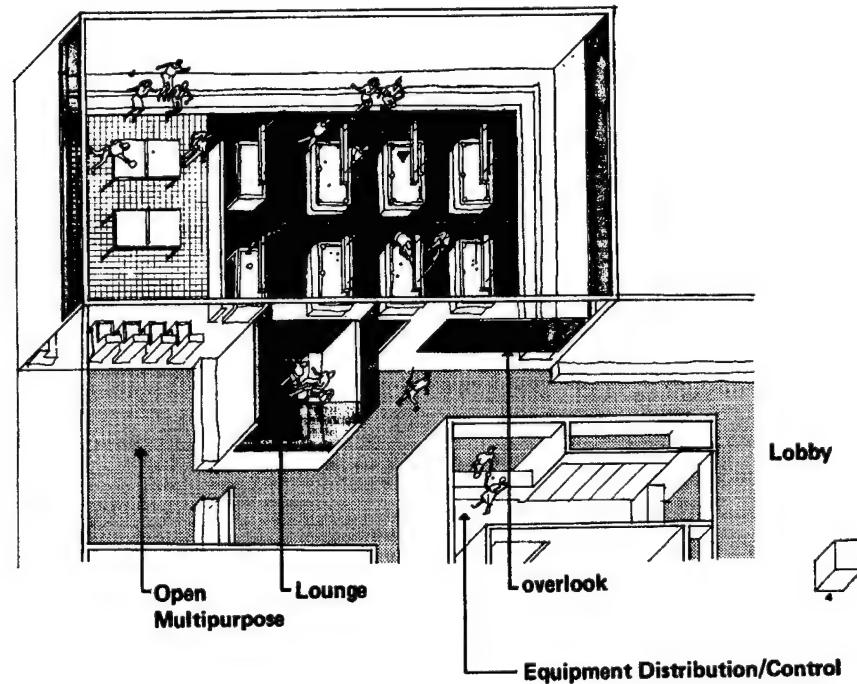


Figure 4-11 Active Games Area

Integrate overlooks, small conversation lounges or standing areas with the activity to accommodate spectators and people waiting to play.

(5) *Design Considerations.* Visual access to the outside is desirable but not mandatory since participants' attention is oriented to the games. Window openings should not produce glare on the tables. Glass areas must be protected from wild cue balls and sticks.

Spectator seating should define limits of the area and separate specific activities. Wide perimeter bench seating should be provided in at least two tiers to accommodate spectator seating in tournament situations and lounging during normal gaming.

Electric games must be securable when remote from the control center.

(6) *Technical Requirements*

(a) *Illumination*

Level 50 ftc
Type fluorescent suspended over tables
Control switched at control desk

(b) *Power*

Outlets Electric game area – wall receptacles, 1 every 4'; floor, every 10' o.c.
General game – 1 every 20'
Special clock outlet mtd 2' below ceiling

(c) *Plumbing*

None

(d) *H V A C*

Summer 78°DB; 65°WB; RH 50%
Winter 65°-68°
Air changes 15 per hour

(e) *Communications*

P/A 1 speaker station
Sound 1 speaker station, each area
3 headphone jacks in waiting area

(f) *Acoustics*

Noise criteria PNC 35-45
Appropriate sound level 42-52 dB
Ave coef of absorption 0.50-0.60

Transmission (STC) +60 dB

(g) *Critical Dimensions*

Room widths because of table sizes with clearance

Pingpong = 21' x 12'

Billiards = 19'-6" x 12'-9"

(7) *Interior Requirements*

(a) *Equipment*

Billiard tables and racks
Pingpong tables
Electric games
Other games

All as required and provided by using service

(b) *Furniture*

Built-in lounge seats on perimeter

(c) *Finish Suggestions*

Walls fabric covered acoustical panels

Floors carpet, except pingpong

Ceilings exposed structure, painted

(d) *Colors*

Walls off -white
Accent warm primary accent colors

4-4 SMALL GROUP ACTIVITIES (continued)

b. TELEVISION LOUNGE.

(1) *Function.* To house TV viewing areas and reduce conflict with other activities. Activities are watching and listening to television, quietly conversing and engaged in small group meetings.

(2) *Participants.* One to 50 people standing, sitting, intently or casually watching and listening to TV.

(3) *Size.*

Overall

12,700 SF Center 750 SF minimum

19,800 SF Center 1,000 SF minimum

27,800 SF Center 1,250 SF minimum

Space/Unit 10 SF per viewer

(4) *Relationships.* The television viewing area should be located away from noisy activities such as billiards, pingpong, electric games, music practice, and special interest, but in a variety of settings throughout the Center.

A minimum of two lounges should be provided or, if possible, at least one lounge for each local television station.

The entrance to the TV space should be open to the transition area and should encourage casual observation of the activity prior to entering the lounge.

(5) *Design Considerations.* TV lounges must facilitate a flexible and informal arrangement of

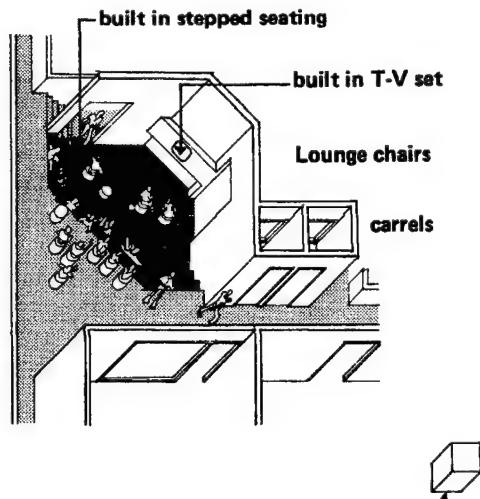


Figure 4-12 Television Lounge

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furniture which will also serve for small group meetings and game areas.

Circulation paths should not occur in front of the screen; do not use two or more sets in the same area.

Consideration should be given to the installation of small sound clouds, baffles, or panels to assist in the reduction of sound transfer from the area.

The focal point of the area should be the screen; attention should be given to sight lines (vertically and horizontally) of viewers to the screens.

(6) Technical Requirements

(a) Illumination

Level	10 ftc
Type	incandescent area
Control	local switch with dimmer

(b) Power

Outlets	1 per set
	1 per lounge area
Special	antenna hook-up

(c) HVAC

Summer	78°DB; 65°WB; RH 50%
Winter	68°-72°
Air changes 20 per hour	

(d) Communications

P/A	1 station
T V	antenna jack

Requirements for Educational TV Service and/or central control system for volume and channel selection should be coordinated with the using service.

(e) Acoustics

Noise criteria	PNC 30
Sound level	38 dB
Ave coef of absorption	0.40-0.50
Transmission (STC)	+50-60 dB

(7) Interior Requirements

(a) Equipment

Televisions

(b) Furniture

Built-in perimeter bench seating,
movable lounge chairs

(c) Finish Suggestions

Walls	fabric or wood slat covered acoustical panels
Floors	carpet
Ceiling	acoustical tile

(d) Colors

Walls	charcoal or cool accent colors
Accent	warm primary or contemporary accent colors

4-4 SMALL GROUP ACTIVITIES (continued)

c. TABLE GAME AREAS.

(1) **Function.** These areas house quiet activities in an informal space that encourages informal participation in or observation of card games, table games, tournaments, meetings, group discussions, classes, reading, or listening to records or tapes over the sound system.

(2) **Participants.** Two or four persons per table. The number of observers varies. 30 or more people may be participating in meetings.

(3) Size.

Overall

All Centers Small game area 150 SF
 Large game area 600 SF

Space/Unit 15 SF per participant-Lounge
 20 SF per participant-Table

(4) **Relationships.** Locate cards and games area near pantry and vending and remote from noise generating activities such as billiards, pingpong, electric games and music practice.

(5) **Design Considerations.** The need for a direct visual link to the outside is not as important as the opportunity for casual observation of the transitional area or other nearby activities.

In small facilities, cards and games must be accommodated in an area that is suitable for other activities.

In facilities larger than 12,700 SF, the card and game area can respond more directly to its

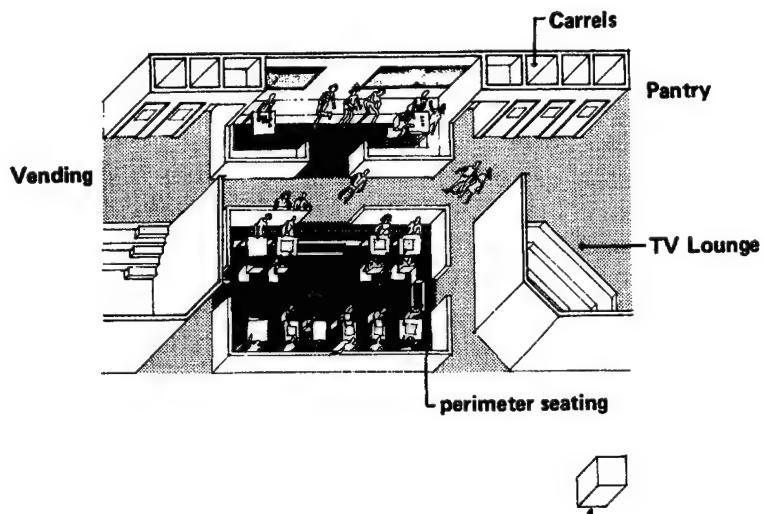


Figure 4-13 Table Game Area

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primary use. This area should depend on low partitions, built-in seating and changes in level, material and color to separate it from compatible activities. The built-in perimeter seating reduces the need for loose chairs, acts as a protective base for the wall and is suitable to any arrangement of tables and chairs; it also acts as an elevated platform for speakers during meetings, and as a display surface during exhibits. Secure storage must be provided for chairs, blackboards, and audio-visual equipment used during meetings.

Design should facilitate circulation and personal interaction.

(6) *Technical Requirements*

(a) *Illumination*

Level	30 ftc on table surface; 10 ftc general
Type	incandescent task, fluores- cent general
Control	local switch with dimmer

(b) *Power*

Outlets	1 per wall
Special	clock outlet mtd 2' below ceiling

(c) *HVAC*

Summer	78°DB; 65°WB; RH 50%
Winter	68°-72°
Air changes 15 per hour	

(d) *Communications*

P/A	1 station
Sound	1 speaker station; 1 head- phone jack every 6' of partition

(e) *Acoustics*

Noise criteria	PNC 30
Sound level	38dB
Ave coef of absorption	0.30-0.40
Transmission (STC)	+45 dB

(7) *Interior Requirements*

(a) *Equipment*

None

(b) *Furniture*

Tables, movable lounge chairs, built-in
seating

(c) *Finish Suggestions*

Walls	painted drywall
Floors	acoustical tile

(d) *Color*

Walls	off-white or light tints
Accents	cool contemporary or pri- mary accent colors

4-4 SMALL GROUP ACTIVITIES (continued)

d. OPEN MULTIPURPOSE AREA

(1) Function. This space houses project activities so that litter and debris are controlled and not permitted to interfere with other areas. Activities include informal participation in hobbies, sewing, newsletter publications, decorations, special projects such as program prop construction or audio-visual presentations, classes and program planning sessions.

(2) Participants. Up to thirty people sitting at tables, working on individual or group projects.

(3) Size.

Overall

Small open multipurpose area 150 SF
Large open multipurpose area 600 SF

Storage 10% of floor area

Space/Unit 25 SF per participant

(4) Relationships. The entrance into the area should encourage casual observation of the activity by patrons in the transitional area. It should be located near the staff workroom and the control desk.

(5) Design Considerations. General planning for this activity should maintain flexibility to facilitate a variety of work area arrangements. The hobby area must also accommodate other activities; therefore, the sink, cleanup and storage areas should be minimized and separate from the main space.

Consideration should be given to the use of exposed joists in the ceiling to facilitate the use of inexpensive display lighting that can clamp onto the structure wherever desired.

Cover the walls with material that will receive thumbtacks such as washable vinyl cork. Avoid

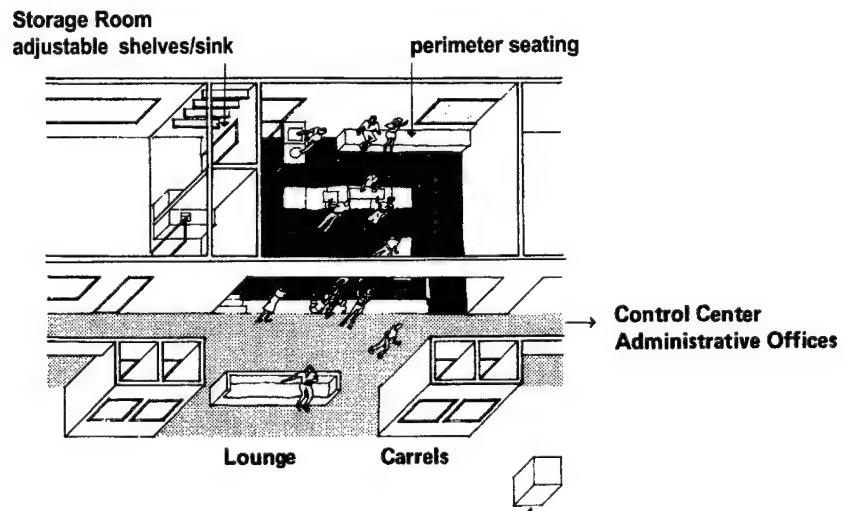


Figure 4-14 Open Multipurpose Area

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the use of broken up wall panels or bulletin boards.

Perimeter built-in benches should also be considered for seating as well as for display purposes.

Provide securable storage for tables, chairs and supplies.

(6) *Technical Requirements*

(a) *Illumination*

Level 70 ftc, work surfaces; 30 ftc, display areas

Type fluorescent task; light track for displays

Control local switch with dimmer

(b) *Power*

Outlets 1 every 12' of partition

Special clock outlet mtd 2' below ceiling

(c) *Plumbing*

Janitor's sink

(d) *H V A C*

Summer 78°DB; 65°WB; RH 50%

Winter 68°-72°

Air changes 6 per hour

(e) *Communications*

P/A 1 station

Sound 1 speaker station; 3 head-phone jacks mtd 30" above floor

(f) *Acoustics*

Noise criteria PNC 35

Sound level 42 dB

Ave coef of absorption 0.30-0.40

Transmission (STC) +45 dB

(7) *Interior Requirements*

(a) *Equipment*

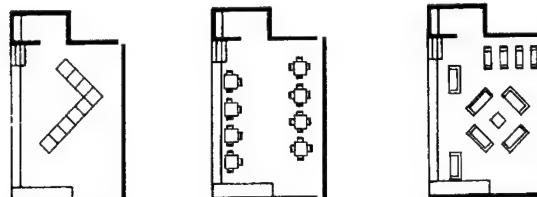
Storage for chairs and tables

12" shelves for supplies

(b) *Furniture*

Folding tables, stacking chairs, built-in perimeter seating

(c) *Finish Suggestions*



Projects

Games

Lounge

Figure 4-15 Open Multipurpose Space Alternative Use Plans

Walls tackable surface, vinyl or cork covered

Floors sheet vinyl or resin epoxy

Ceiling exposed structure

(d) *Colors*

Walls off -white

Accents primary accent colors and charcoal

4-4 SMALL GROUP ACTIVITIES (continued)

e. ENCLOSED MULTIPURPOSE AREA.

(1) *Function.* This space houses noisy activities and activities requiring acoustical privacy. These activities may include listening to records and tapes; taping combo practice, speakers or program presentations; participating in programs or meetings; or conferring in private.

(2) *Participants.* Up to 60 patrons listening to combo practice sessions; up to 75 involved in private meetings.

(3) *Size.*

Overall

Small enclosed multipurpose area 150 SF

Large enclosed multipurpose area 600 SF

Storage 10% of floor area

Space/Unit 20 SF per participant

8 SF per spectator

(4) *Relationships.* These activities generate more noise than any other and must not interfere with administrative offices or quiet activities such as reading, writing, listening, conversing, phoning, meeting, or viewing television. However, this space should be near the control center for distribution of instruments.

Since this activity attracts onlookers, develop the entries to invite the casual passerby to stand and watch the event before deciding to enter or move on.

(5) *Design Considerations.* The enclosed multipurpose spaces require sufficient glazing to allow surveillance of the activity inside by staff personnel and passersby. The large space must accommodate informal instruction as well as small scale planned or spontaneous presentations with informal audiences.

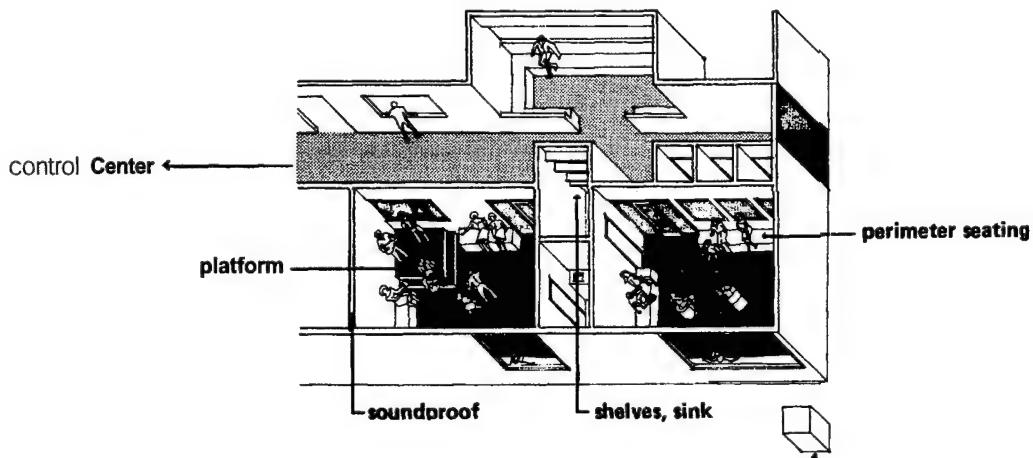


Figure 4-16 Enclosed Multipurpose Area

These spaces must be soundproof. The HVAC system should not act as a transmitter of noise to other areas of the Center; sound baffles should be used in the system to handle this potential problem. Also, partition construction systems should be designed to continue through to roof construction to minimize sound transmission over and through the walls. Interior glazing should be designed to assist sound attenuation.

Changes in level and material should define platforms to accommodate viewers and players interchangeably. Built-in perimeter bench seating should be incorporated into the design.

Exterior windows are desirable.

(6) Technical Requirements

(a) Illumination

Level	30 ftc
Type	area fluorescent
Control	local control with dimmer

(b) Power

Outlets	1 every 12' of partition
Special	clock outlet mtd 2' below ceiling

(c) HVAC

Summer	78°DB; 65°WB; RH 50%
Winter	68°-72°
Air changes 15 per hour	

(d) Communications

P/A	1 station
Sound	1 speaker

(e) Acoustics

Noise criteria	PNC 30
Sound level	50 dB
Ave coef of absorption	0.30-0.40
Transmission (STC)	+50-60 dB
Reverberation time	1.4-1.6

(f) Critical Dimensions

Ceiling height	15' to 20'.
Room ratio	1(H):1.25(W):1.60(L)

(7) Interior Requirements

(a) Equipment

Secure storage area for chairs and equipment

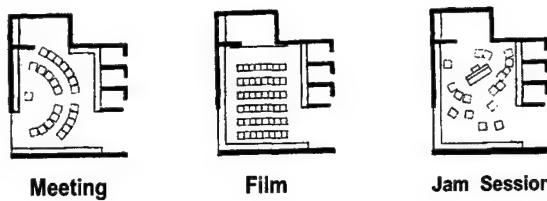


Figure 4-17 Enclosed Multipurpose Space Alternative Use Plans

(b) Furniture

Stacking chairs, folding tables

(c) Finish Suggestions

Walls	fabric or wood covered acoustical panels
Floors	carpet
Ceiling	exposed structure

(d) Colors

Walls	off-white
Accents	cool and warm primary colors

4-4 SMALL GROUP ACTIVITIES (continued)

f. TELEPHONE LOUNGE.

(1) *Function.* This lounge houses a twenty-four-hour telephone facility for use by all personnel. Activities are generally limited to telephoning, involving either short or prolonged conversation, and waiting for calls or for friends to complete calls.

(2) *Participants.* Individuals occasionally accompanied by friends waiting; 5 to 15 people.

(3) *Size.*

Overall	Lounge	No. of Phones
12,700 SF Center	100 SF	3
19,800 SF Center	200 SF	6
27,800 SF Center	300 SF	8

(4) *Relationships.* Locate the telephone lounge adjacent to and immediately accessible to the main entrance and the ITT office. The telephone lounge should have access to the exterior for twenty-four-hour service, but should be secured from the remainder of the facility after hours.

(5) *Design Considerations.* Integrate several telephones with seating to create a living room atmosphere in facilities larger than 12,700 SF. Telephone booths should be provided to accommodate private conversations. At least one phone booth should be planned to permit use by an individual in a wheelchair.

The area should be planned to facilitate visual supervision of the activity both from inside and

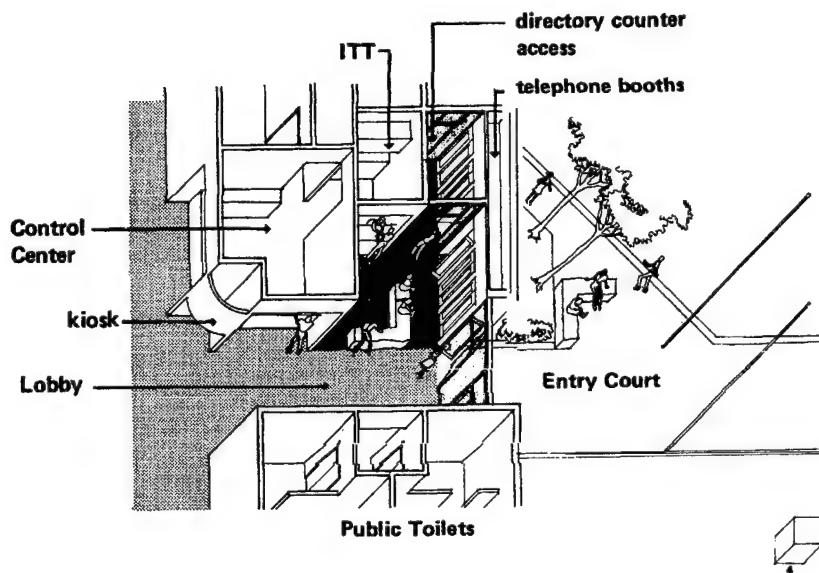


Figure 4-18 Telephone Lounge

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outside the building. Provide telephone booths, storage for local and several out-of-state directories and built-in seating. Telephone booths should have washable wall surfaces so that graffiti can be washed off periodically.

(6) *Technical Requirements*

(a) *Illumination*

Level	30 ftc, booths; 10 ftc, lounges
Type	direct fluorescent task, warm white
Control	switch at control desk

(b) *Power*

Outlets	1
Special	clock outlet mtd 2' below ceiling, visible from booths

(c) *HVAC*

Summer	78°DB; 65°WB; RH 50%
Winter	68°
Air changes 6 per hour	

(d) *Communications*

Phones	separate from Center's phones
Sound	1 speaker

(e) *Acoustics*

Noise criteria	PNC 30
Sound level	30 dB
Ave coef of absorption	0.40-0.50
Transmission (STC)	+35 dB

(7) *Interior Requirements*

(a) *Equipment*

Phone booths as provided by Telephone Company

(b) *Furniture*

Built-in lounge seating

(c) *Finish Suggestions*

Walls	painted drywall
Floor	carpet
Ceiling	acoustical tile

(d) *Colors*

Walls	primary colors
Accents	white or black

4-4 SMALL GROUP ACTIVITIES (continued)

g. CARRELS.

(1) **Function.** Carrels provide a private environment where individuals may pursue activities without interference from other people or activities. These activities include reading, writing, listening to records and tapes, daydreaming, and conversing. These activities are usually individually oriented, introspective, and non-interactive.

(2) **Participants.** Usually limited to individuals. Occasionally two or more people conversing privately.

(3) Size.

All Centers 30 SF minimum
12,700 SF Centers 4, minimum number
19,800 SF Centers 8, minimum number
27,800 SF Centers 12, minimum number

(4) **Relationships.** Locate carrels to maintain visual link to the center of the central program area and provide the opportunity to overlook other activities.

(5) **Design Considerations.** Carrels house

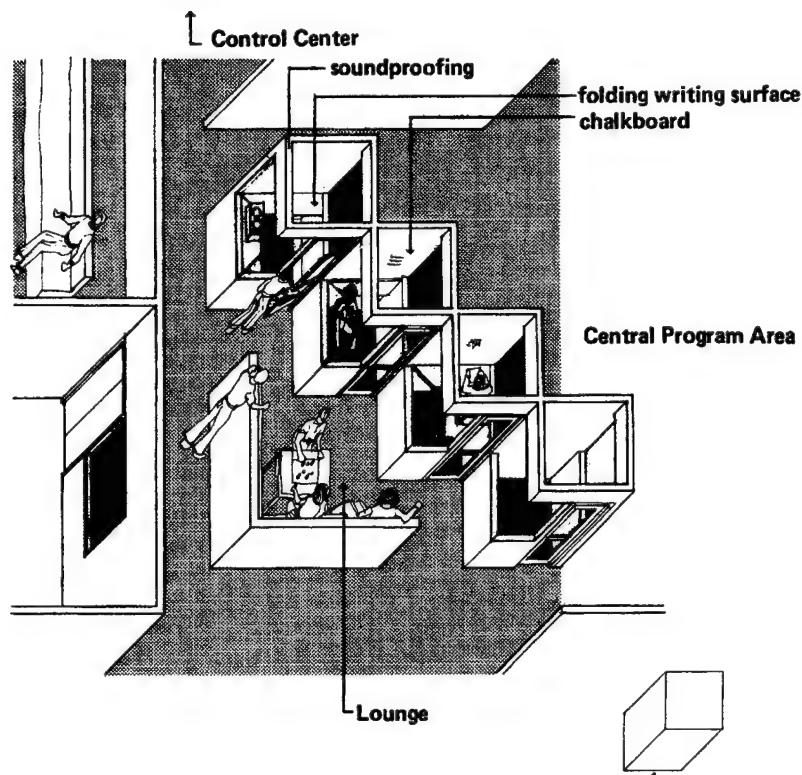


Figure 4-19 Carrels

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both quiet and noisy activities and should therefore be enclosed and insulated for sound, accommodating the requirements of its highest potential use. Window cut-outs and entries should be used to create views from the carrels; these will also allow surveillance of the activity.

Provide chalkboards or washable wall coverings, suitable to drawing with felt tip pens to provide surfaces for graffiti. This device should be used to create a desirable outlet for what is otherwise considered to be a destructive personalization of space.

All speakers and sound system components should be built-in and flush-mounted. Consideration should be given to procurement of prefabricated "sound modules" currently available commercially through several manufacturers of library and school equipment.

(6) Technical Requirements

(a) Illumination

Level	30 ftc on tables
Type	incandescent task
Control	local switch with dimmer

(b) Power

Outlets	1 per carrel mtd at counter height
---------	------------------------------------

(c) HVAC

Summer	78°DB; 65°WB; RH 50%
Winter	65°-68° 65
Air changes 15 per hour	

(d) Communications

P/A	1 station per carrel
Sound	1 multi-channel selector and headphone jack for each carrel

(e) Acoustics

Noise criteria	PNC 10-20
Sound level	20-30 dB
Ave coef of absorption	0.40-0.50
Transmission (STC)	+50-60 dB

(f) Minimum Dimensions

5'-6" width

(7) Interior Requirements

(a) Equipment

Sound equipment, sound modules (coordinate with using service)

(b) Furniture

Lounge chairs, writing surface

(c) Finish Suggestions

Walls	fabric-covered acoustical panels and chalkboards
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Floors	carpet
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Ceilings	acoustical tile
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(d) Color

Walls	sandstone, soft gray, or charcoal
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Accents	cool primary accent colors
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4-4 SMALL GROUP ACTIVITIES (continued)

h. SPECIAL INTEREST AREA,

(1) **Function.** This space houses special interest programs such as classes, clubs, and coffeehouse activities so that they may function at hours when the remainder of the facility is closed as well as when it is open. The activities include hobbies, such as coin collecting, ski club, etc.; wives' club meetings; coffeehouse activities such as rap sessions; small group entertainment presentations; and snack preparation and service.

(2) **Participants.** Small groups of two to sixty; meetings of from twenty to sixty.

(3) **Size.**

19,800 SF & 27,800 SF Centers

Meetings	Office	Storage
1000 SF	100 SF	100 SF

(4) **Relationships.** Locate adjacent to and immediately accessible to lobby and outside and toilets. It must be designed to operate on hours independently of the remainder of the Center.

(5) **Design Considerations.** This space must be able to accommodate a complete change in decor to correspond with unique programs. These activities are independent of other Center activities and are potentially noisy. The area should be completely partitioned and insulated for sound.

Special interest programs require a storage area and one independent program office for a full-time staff member. The office should be adjacent to the special interest room and have control of the storage room.

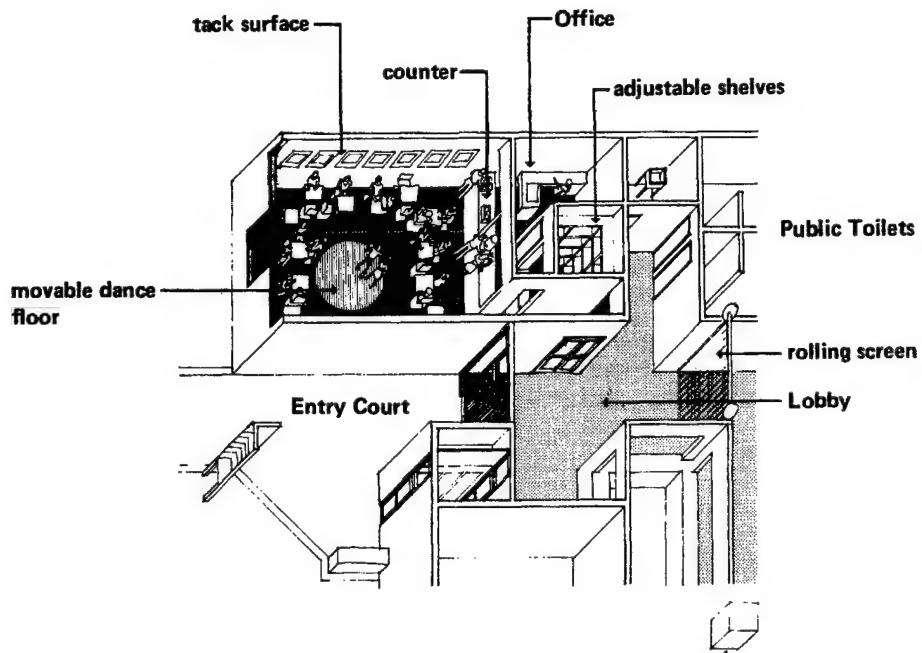


Figure 4-20 Special Interest Area

These activities do not require visual access to the outside.

A counter should be provided for secure placement of turntables, tapes and amplifier equipment, and separate internal sound and P/A system to serve only the special interest area.

(6) Technical Requirements

(a) Illumination

Level 30 ftc
Type incandescent light track
Control local switch with dimmer

(b) Power

Outlets 1 every 12' wall space, on service counter
Special clock outlet mtd 2' below ceiling
ceiling outlets use extra circuit of light track

(c) Plumbing

Double sink
Coffee and espresso makers

(d) HVAC

Summer 78°DB; 68°WB; RH 50%
Winter 68°
Air changes 15 per hour

(e) Communications

P/A 1 speaker station at service counter and office
Phones desk set in office
Sound 3 speaker stations; headphone jacks every 6'; separate system from Center's console system provided by using service; microphone jacks spaced as required by using service

(f) Acoustics

Noise criteria	PNC 30
Sound level	42 dB
Ave coef of absorption	0.30-0.40
Transmission (STC)	+50-60 dB

(7) Interior Requirements

(a) Equipment

Espresso machine; popcorn maker; hot

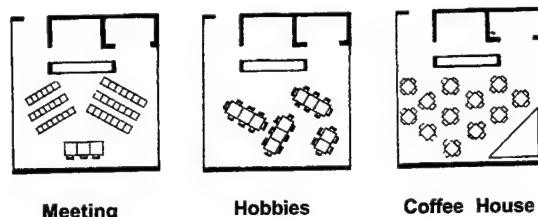


Figure 4-21 Special Interest Area Alternative Use Plans

plates, stereo cabinets and equipment – supplied by using service; service counter with securable storage cabinets

(b) Furniture

Built-in lounge seating; movable lounge seating; stackable chairs and tables; movable presentation platform

(c) Finish Suggestions

Walls painted drywall with vinyl covered tack surfaces and picture railing

Floor carpet
Ceiling exposed structure

(d) Colors

Walls off-white
Accents primary accent colors

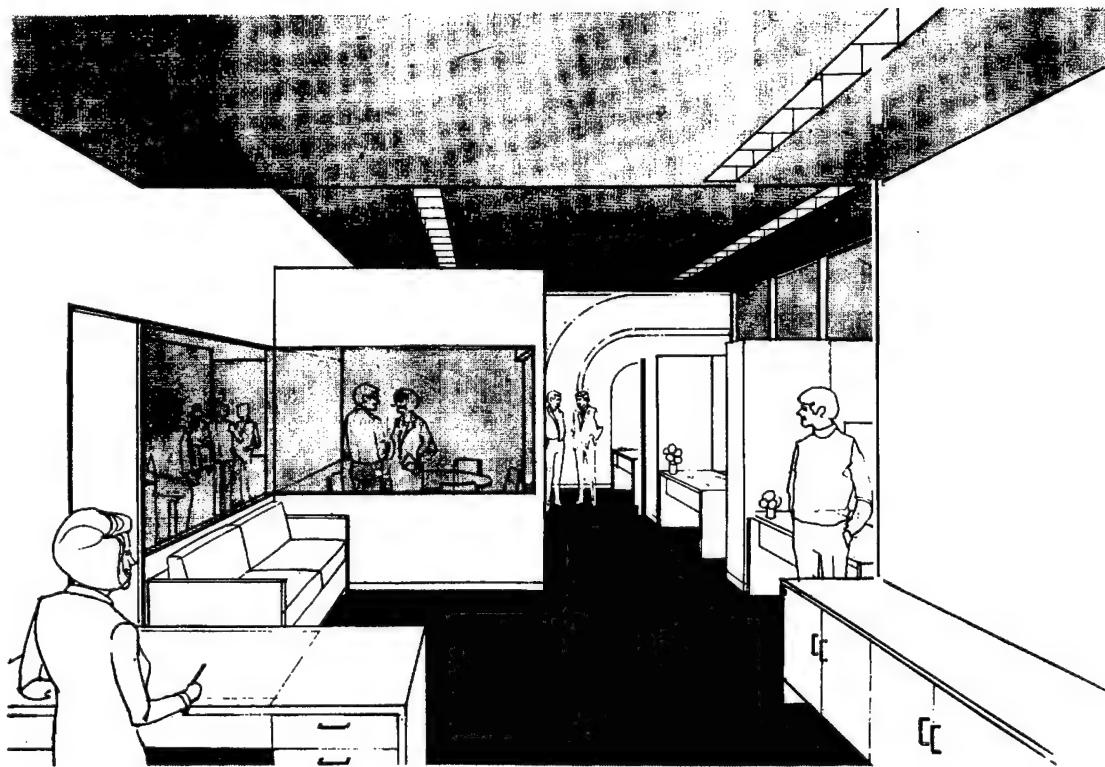


Figure 4-22 **Administrative Activities**

4-5 ADMINISTRATIVE ACTIVITIES

a. CONTROL CENTER.

(1) *Function.* The control center serves as the general information office, the equipment storage and distribution point, the area from which the recreation staff maintain visual control over the activities of the facility and operate the P/A system, TV and record/tape control.

The activities involve the staff conversing with users, distributing equipment, observing other activities and participants, operating the P/A and sound system, and coat checking during large group activities.

(2) *Participants.* A varying number of patrons waiting to be served and one to three staff members.

(3) Size.

Overall	Counter	Storage
12,700 SF Center	150 SF	250 SF
19,800 SF Center	300 SF	350 SF
27,800 SF Center	400 SF	400 SF

(4) *Relationships.* The control center should be adjacent to and visible from the entrance lobby and administrative offices.

It should be near the central program area, pantry and telephones, all activities requiring distribution of equipment, public toilets and janitor's closet.

(5) *Design Considerations.* Primary activities are oriented to the interior of the building and

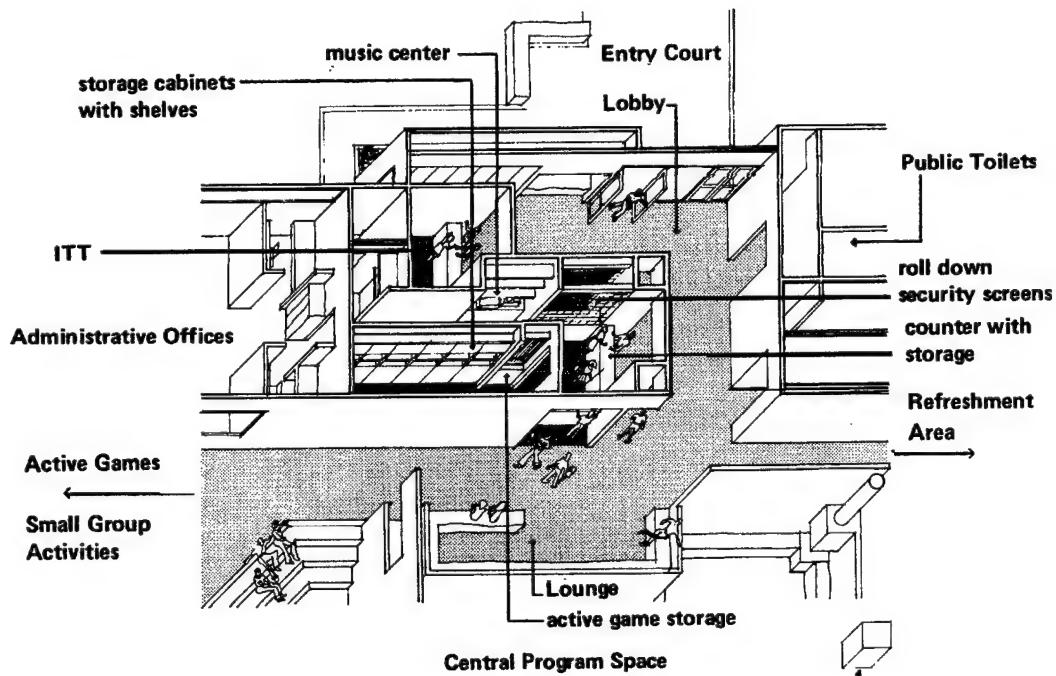


Figure 4-23 Control Center

do not require exposure to the outside or natural light.

Provide a counter in view of the main desk for permanently mounted P/A system, record and tape players with storage for records and tapes. Provide an additional counter for distribution of supplies and equipment. This distribution counter must accommodate a stool and knee space for comfortable seating and a counter pass-through for heavy equipment.

Since both public and staff activities focus on this counter, arrange all equipment and storage areas to facilitate counter accessibility.

Centers of 12,700 SF or less should include a worktable for preparation of posters, etc.

In addition to the partitioned securable storage rooms, the entire area including service counters must also be securable.

(6) *Technical Requirements*

(a) *Illumination*

Level 40 ftc on counter surface
Type incandescent direct task
Control local switch

(b) *Power*

Outlets 1 per 12'
Special clock outlet mtd 2' below
ceiling above counter

(c) *HVAC*

Summer 78°DB; 65°WB; RH 50%
Winter 65°-68°
Air changes 6 per hour

(d) *Communications*

P/A main station
Phones desk set
Sound main station

(e) *Acoustics*

Noise criteria PNC 30
Sound level 0.20-0.30
Ave coef of absorption +43 dB
Impact noise rating +5

(7) *Interior Requirements*

(a) *Equipment*

P/A system console
Record/tape system console

(b) *Furniture*

Built-in counter, stools, worktables

(c) *Finish Suggestions*

Painted or vinyl-covered drywall

(d) *Colors*

Walls primary accent colors
Accents white or black

(e) *Storage Requirements*

The following represents an example of typical control center storage requirements; actual requirements must be coordinated with using service:

Books and directories

Headphones

Letter writing supplies

Typewriters

Table games

Tape recorders

Pool and pingpong equipment

Projectors

Microphones

Prop preparation equipment

Tools

Broken equipment

Coat storage – 300 people

Music equipment:

2 Drum sets complete with cymbals

2 Bongo drums

1 Conga drum

6 Electric guitars

2 Electric bass guitars

6 Electric guitar amplifiers w/microphones

2 Electric bass guitar amplifiers

1 Trumpet

1 Alto saxophone

2 Banjos

6 Acoustical guitars

1 Electric organ

1 Accordion

1 Autoharp

Assorted number of rhythm instruments

Reeds, drumsticks, replacement strings

Miscellaneous equipment

4-5 ADMINISTRATIVE ACTIVITIES (continued)

b. ADMINISTRATIVE OFFICES.

(1) Function. The administrative offices provide work and conference space for Recreation Center staff. The activities include working individually, consulting, meeting, lounging, preparing graphics and indirectly monitoring Center activities.

(2) Participants. Three to five staff members who, by training and profession, rely heavily on verbal communication with their associates and the people they serve. Other participants include enlisted personnel and volunteer personnel.

(3) Size.

Overall	Office	Meeting	Work	Storage
12,700 SF	Center 300	100	–	40
19,800 SF	Center 300	100	100	50
27,800 SF	Center 500	125	150	75

Space/Unit 100 SF per office + central work area storage = 10% of floor area

(4) Relationships. The administrative offices should be adjacent to and immediately accessible to the control center, information tour and travel, and the lobby.

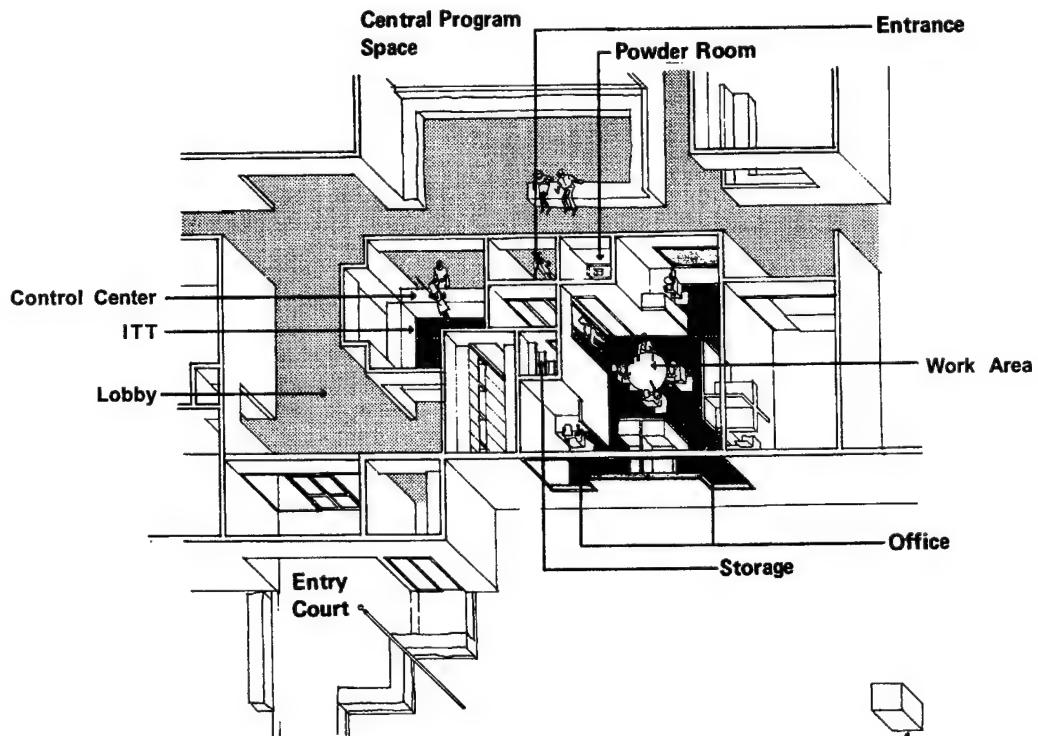


Figure 4-24 Administrative Offices

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Internally, the offices should surround a central work and meeting area; the storage areas and powder room should be adjacent to and immediately accessible to the offices and work area. The office area should be entered directly from the transitional area through the central work area.

(5) *Design Considerations.* An open plan layout should be used to enhance the ease of communication throughout the area. Individual work areas should be separated from each other by storage and files and should focus on a common area which serves as a lounge or informal conference room.

A staff workroom should be included in facilities larger than 12,700 SF as additional space becomes available for preparation of visual aids, posters, charts, etc. This area requires layout table space as well as storage or access to storage for art supplies.

The area must have a clearly defined public entrance, must be securable and should be served by a private staff lavatory.

Monitoring of adjacent activities from the offices should be facilitated. Provide window in principal office areas for outside view and natural light. Orient glass to avoid glare from morning and afternoon sun.

The administrative office must accommodate a desk, chair, files, and visitors' seating for each full-time staff member. The lounge area must accommodate the placement of comfortable chairs, a sofa, and coffee table.

Storage must provide for staff member coats and personal effects as well as general office supplies.

(6) *Technical Requirements*

(a) *Illumination*

Level 70 ftc, work surface; 30 ftc, lavs
Type fluorescent; incandescent in mtg areas
Control local switched

(b) *Power*

Outlets 1 per wall in each office
Special clock outlet in central area

(c) *Plumbing*

W.C.
Lavatory

(d) *H V A C*

Summer 78°DB; 65°WB; RH 50%
Winter 68°-72°
Air changes 8 per hour

(e) *Communications*

P/A 1 station
Phones 1 at each desk
Sound 1 speaker

(f) *Acoustics*

Noise criteria PNC 30-40
Sound level 34-37 dB
Ave coef of absorption 0.30-0.40
Transmission (STC) +43 dB

(7) *Interior Requirements*

(a) *Equipment*

Office machines, Xerox, duplication (provided by using service)

(b) *Furnishings*

Desks and chairs, file cabinets, work tables, lounge chairs, sofa

(c) *Finish Suggestions*

Walls painted drywall
Floors carpet
Ceilings acoustical tile

(d) *Colors*

Walls off -white
Accents cool primary accent colors

4-5 ADMINISTRATIVE ACTIVITIES (continued)

c. INFORMATION TOUR & TRAVEL (ITT).

(1) **Function.** ITT houses the following activities: ticket dispensing, consulting with staff, planning trips, looking at maps, making reservations, viewing rearview projection presentations and conversing in small groups.

(2) **Participants.** One or two staff members and a variable number of people reading available information or seeking assistance.

(3) Size.

Overall	Counter	Office	Lounge
12,700 SF	Center	50 SF	-
19,800 SF	Center	50 SF	60 SF
27,800 SF	Center	50 SF	100 SF 60 SF
Space/Unit		100 SF per office	
15 SF per user at lounge/counter			

(4) **Relationships.** All ITT areas should be adjacent to and immediately accessible to lobby and telephones.

In facilities of 12,700 SF or less, ITT is consolidated with the control center.

(5) **Design Considerations.** In facilities larger than 12,700 SF, the ITT area is treated as a lounge and office associated with, but separate from, administrative offices. These offices offer the only consolidated recreation information and travel services available for the entire installation. They require securable administrative areas and service counter areas which can accommodate, as a minimum, the following: two file cabinets, a safe, a desk and chair, a counter stool, secure storage of audio-visual

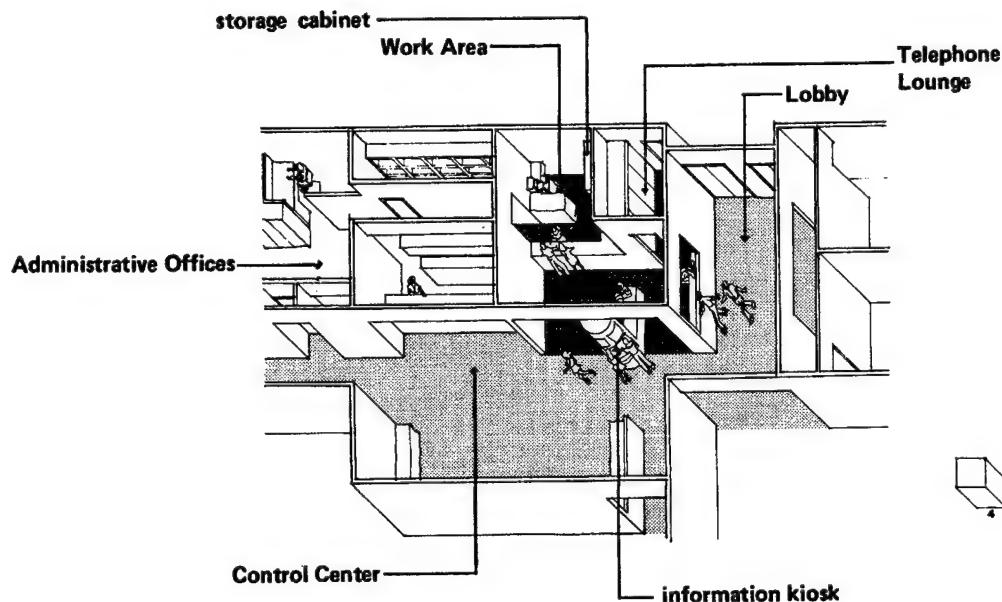


Figure 4-25 Information, Tour & Travel

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display equipment, an adding machine, and typewriter stand.

A lounge area adjacent to the administrative counter is required in the ITT office, which should be open to the transitional area and will accommodate the following: kiosks, literature racks, poster displays, and serve as a waiting area for patrons seeking the services of ITT staff.

All ITT areas should be planned to allow casual observation of magazines and posters without requiring verbal contact with a staff member.

(6) *Technical Requirements*

(a) *Illumination*

Level	30 ftc, counter; 10 ftc, lounge
Type	incandescent task
Control	local, switch behind counter

(b) *Power*

Outlets	1 every 12'
Special	1 per kiosk

(c) *HVAC*

Summer	78°DB; 65°WB; RH 50%
Winter	68°
Air changes 10 per hour	

(d) *Communications*

P/A	1 station in lounge
Phones	desk set – 1 class "A" line
Sound	1 speaker station in lounge

(e) *Acoustics*

Noise criteria	PNC 30-40
Sound level	42 dB
Ave coef of absorption	0.30-0.40
Transmission (STC)	+40 dB

(7) *Interior Requirements*

(a) *Equipment*

2 securable file cabinets; safe, securable storage of audio-visual display equipment including rear projection slide viewers and screens; adding machines. Provisions for teletype may be required.

(b) *Furniture*

Lounge chairs, stools behind counter, built-in counter, desk and chair, counter

stool, typewriter stand.

(c) *Finish Suggestions*

Walls	painted drywall
Floors	carpet
Ceiling	acoustical tile

(d) *Colors*

Walls	warm primary colors
Accents	white, black or charcoal

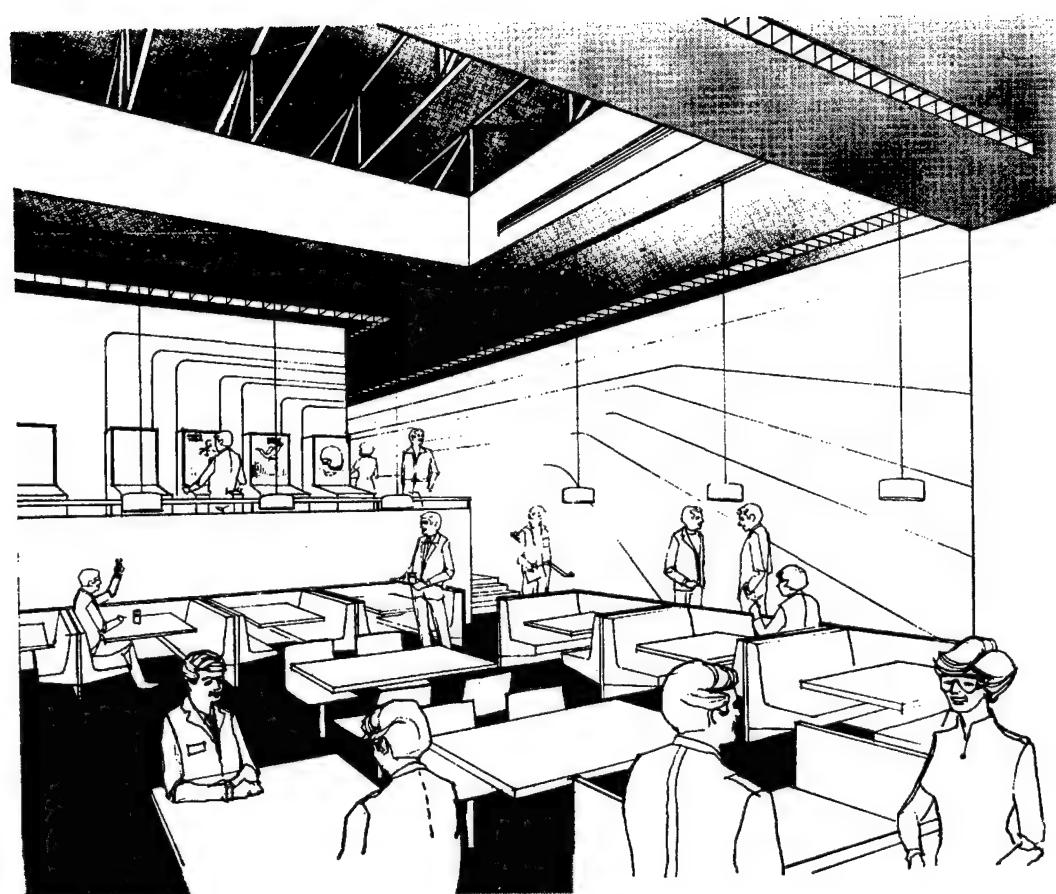


Figure 4-26 **Refreshment Activities**

4-6 REFRESHMENT ACTIVITIES

a. VENDING AREA.

(1) **Function.** The vending area houses machines which dispense food and electric games which are operated by AAFES. Activities include purchasing and consuming snack meals from permanent vending facilities; informally conversing and gaming.

(2) **Participants.** 28 to 38 people sitting and eating; varying numbers using the electric game machines.

(3) Size.

Overall	Dining	Vending	Game
12,700 SF Center	500	200	150 SF
19,800 SF Center	1,075	325	250 SF
27,800 SF Center	Either Snack Bar or Amusement Center		
Space/Unit	15 SF per participant seated + machine area		

(4) **Relationships.** The vending area should

be located near the lobby so that customers can visit the Recreation Center for the sole purpose of obtaining snacks and beverages. However, the customer should be able to see other recreation activities taking place so that interest may be aroused. The snack area should be visible and directly accessible from the central program area.

Functionally, the vending area should be near the toilet rooms and immediately off a service area to permit delivery of material and trash removal.

The vending area should be remote from the active game area to reduce food and drink damage to equipment.

Internally, the vending machine area should face the dining area and the game area to permit consumption at both tables and at games.

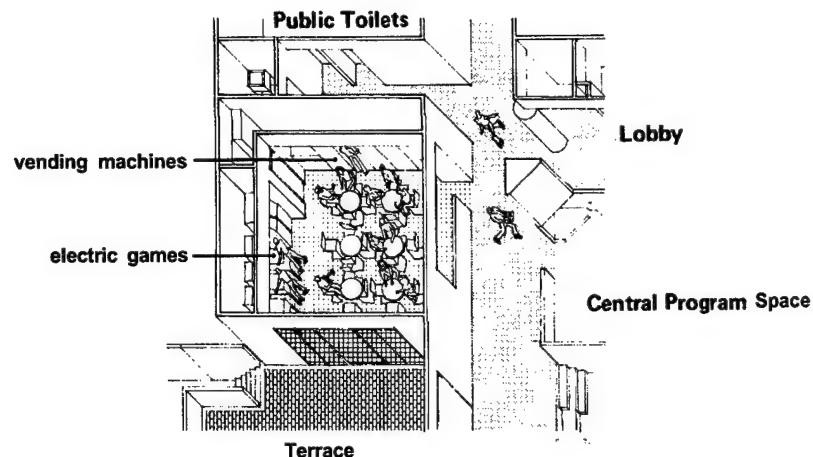


Figure 4-27 Vending Area

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(5) **Design Considerations.** The eating area of this space should not be merely utilitarian. Its atmosphere should provide opportunities for relaxed small group interaction over food. The machine area should be planned to minimize traffic and noise conflicts with the eating area. Orient the eating area to take advantage of natural light and exterior views.

HQ AAFES Engineering Division should be requested to participate in the coordination of food service activities during the preliminary or concept stage of planning. Requests for coordination should be directed to HQ AAFES, Attn: EN-A, Dallas, Texas 75222. AAFES will provide detailed Furniture and Food Equipment layouts with an equipment list stating power and utility requirements. General guidance on technical requirements and interior requirements follows.

(6) **Technical Requirements**

(a) **Illumination**

Level	30 ftc
Type	incandescent; direct over machines, indirect over tables
Control	local switch with dimmer

(b) **Power**

Outlets	1 per wall; 1 per vending machine and game machine; each machine @ 115v 60c 1 PH
Special	clock outlet mtd 2' below ceiling
Total electric load	
12,700 SF Centers = 115 amps	
19,800 SF Centers = 165 amps	
(coordinate with AAFES)	

(c) **Plumbing**

Slop sink in storage area
Cold water line to vending machine
(coordinate with AAFES)

(d) **HVAC**

Summer 78°DB; 65°WB; RH 50%
Winter 65°-70°
Air changes 20 per hour

(e) **Communications**

P/A 1 station

(f) **Acoustics**

Noise criteria	PNC 35-45
Sound level	42-52 dB
Ave coef of absorption	0.30-0.40
Transmission (STC)	+43 dB

(g) **Critical Dimensions**

12,700 SF Centers = 28'-0" x 30'-0"
19,800 SF Centers = 32'-6" x 35'-0"

(7) **Interior Requirements**

(a) **Equipment**

See diagram (coordinate with AFFES)

(b) **Furniture**

See diagram (coordinate with AAFES)

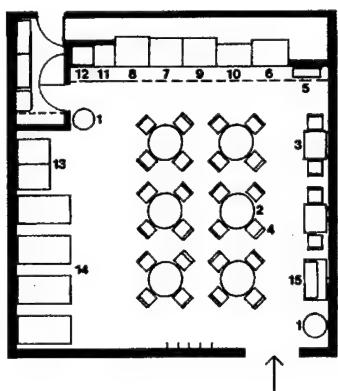
(c) **Finish Suggestions**

Walls	vinyl covered drywall
Floors	vinyl covered or epoxy resin
Ceiling	exposed structure or acoustical tile

(d) **Colors**

Walls	off -white
Accent	cool and warm primary colors

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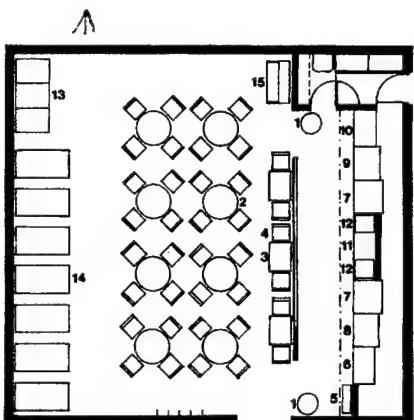
FURNITURE & EQUIPMENT SCHEDULE - 12,700 SF CENTER

Utility Requirements

1. Trash Receptacle		
2. Dining Table		
3. Dining Table		
4. Chairs		
5. Coin/BillChanger	E	
6. Vending Machine/Candy	E	
7. Vending Machine/Coffee	E	CW
8. Vending Machine/All-Purpose	E	
9. Vending Machine/Cold Drinks	E	CW
10. Vending Machine/Multi-Product	E	
11. Condiment Unit	E	
12. Microwave Oven	E	
13. Skill Machines (2)	E	
14. Pinball Machines (4)	E	
15. Juke Box	E	

CODE: E = Electricity
CW = Cold Water

Figure 4-28 Vending Area - 12,700 SF Center Furniture & Equipment Layout



FURNITURE & EQUIPMENT SCHEDULE - 19,800 SF CENTER

Utility Requirements

1. Trash Receptacle		
2. Dining Table		
3. Dining Table		
4. Chairs		
5. Coin/BillChanger	E	
6. Vending Machine/Candy	E	
7. Vending Machine/All-Purpose (2)	E	
8. Vending Machine/Coffee	E	CW
9. Vending Machine/Cold Drink	E	CW
10. Vending Machine/Multi-Product	E	
11. Condiment Unit	E	
12. Microwave Ovens (2)	E	
13. Skill Machines (3)	E	
14. Pinball Machines (7)	E	
15. Juke Box	E	

CODE: E = Electricity
CW = Cold Water

Figure 4-29 Vending Area - 19,800 SF Center Furniture & Equipment Layout

4-6 REFRESHMENT ACTIVITIES (continued)

b. SNACK BAR.

(1) **Function.** The snack bar provides full food services and electric games where there are no other permanent exchange facilities available in the immediate area; operated by AAFES. Activities include purchasing and consuming food and drink, conversing, and playing electrically operated games.

(2) **Participants.** 84 patrons and staff in small groups of one to six.

(3) **Size.**

27,800 SF Centers

Dining	Serving	Kitchen	Games
1,400 SF	700 SF	1,000 SF	350 SF
Space/Unit 12 SF per diner			

(4) **Relationships.** The snack bar should be adjacent to and immediately accessible from the lobby. All other areas should be able to be secured from the snack bar to permit its operation during times when the Center is closed.

The snack bar should be near the toilet rooms and immediately adjacent to the service court to permit deliveries and trash removal.

The snack bar should also be adjacent to the terrace area to accommodate outdoor dining, and located away from the active game area.

Internally, the AAFES game area should be adjacent to the snack bar area to allow consumption of food and drink while playing games.

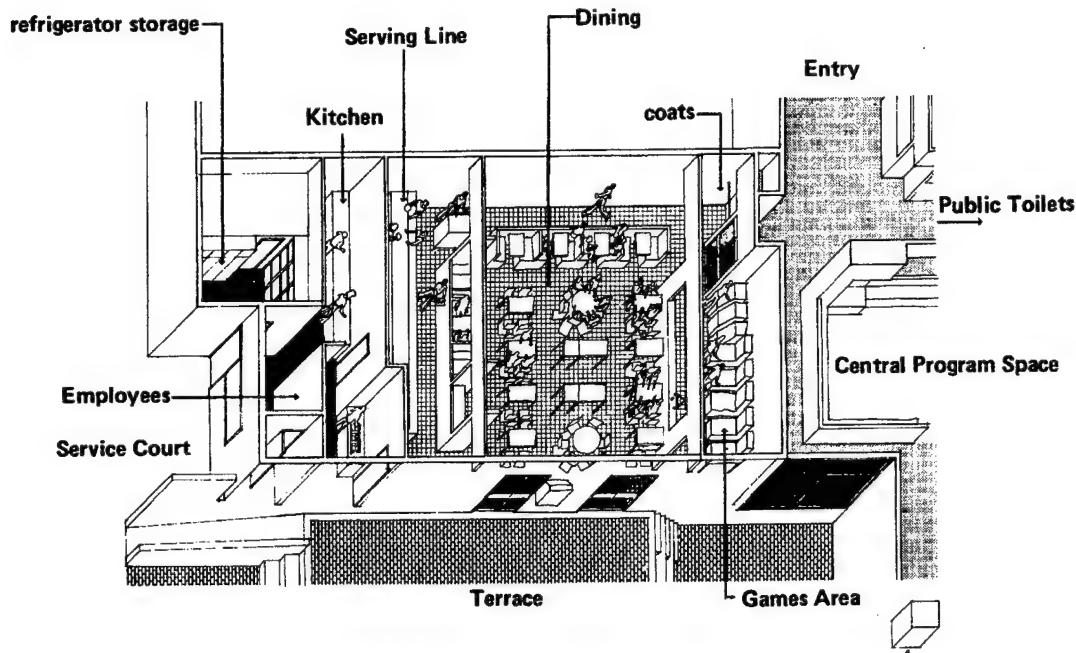


Figure 4-30 Snack Bar

(5) Design Considerations. The snack bar is the second largest activity in size in the Recreation Center, and although it is an administratively and physically independent section except at the lobby, the snack bar should be visually related to other activities. Eating areas defined by transparent partitions should overlook the central program area and the terrace. Internally, the areas should be separated by a decorative and booth-height screen wall. Windows should be maximized within parameters set for energy conservation to provide a view to the outside. In addition, a variety of shaded and sunny eating areas, both inside and outside, should be created.

Cross traffic through the dining area should be minimized and directed along clearly defined paths.

A mixed seating arrangement consisting of two-and four-place rectangular tables, four-place booths, and six-place round tables should be provided to accommodate varied sizes of customer groups and add interest and informality to the dining area.

HQ AAFES Engineering Division should be requested to participate in the coordination of food service activities during the preliminary or concept stage of planning. Requests for coordination should be directed to HQ AAFES, Attn EN-A, Dallas, Texas 75222. AAFES will provide detailed Furniture and Food Equipment layouts with an equipment list stating power and utility requirements. General guidance on technical requirements and interior requirements follows.

(6) Technical Requirements

(a) Illumination

Level	30 ftc game, dining, kitchen areas
	70 ftc serving area
Type	incandescent; direct in serving lines, indirect in dining areas
	fluorescent; indirect in kitchen and game area
	provide sanitary fixtures in kitchen and serving line
Control	local switching
	dimmer control in dining area

(b) Power

Outlets	1 per wall in dining area; 1 per game
	see diagram for kitchen and serving area
Special	clock outlet 2' below ceiling above serving line
Total electric load	120/208v 3Ø4 wire
Capacity	480 amps minimum (coordinate with AAFES)

(c) Plumbing

See diagram (coordinate with AAFES)

(d) HVAC

Summer	78°DB; 65°WB; RH 50%
Winter	65°-70° dining area; 66° kitchen

Air changes 15 per hour, dining area
25 per hour, kitchen

(e) Communications

P/A	1 station
Telephone	1 in office area
Sound	none

(f) Acoustics

	Public Kitchen
Noise criteria	PNC 35 PNC 45
Sound level	38 dB 52 dB
Ave coef of absorp	0.30 0.25-0.40
Transmission (STC)	+43 dB +43 dB

(g) Critical Dimensions

See diagram (coordinate with AAFES)

(7) Interior Requirements

(a) Equipment

See diagram (coordinate with AAFES)

(b) Furniture

See diagram (coordinate with AAFES)

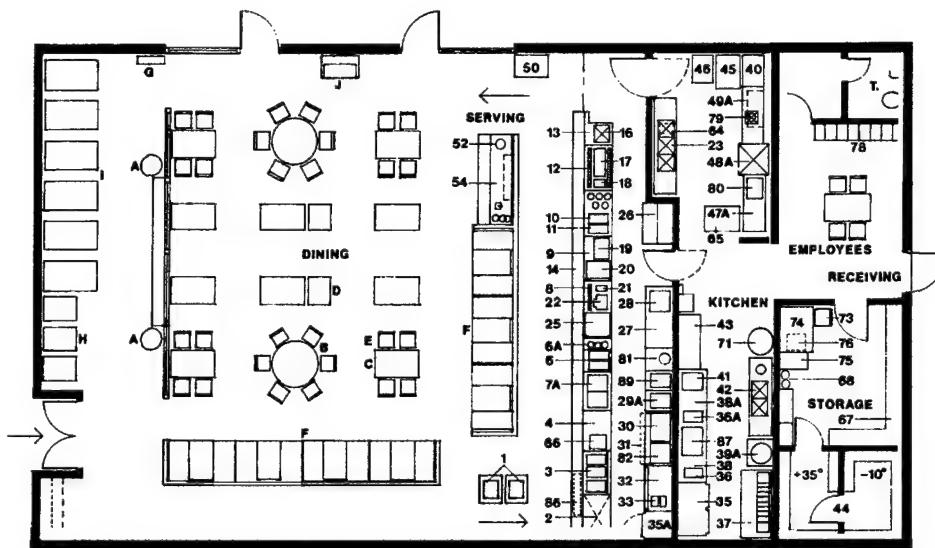
(c) Finish Suggestions

Walls	vinyl covered drywall, dining area
Floors	sheet vinyl or epoxy resin in dining area; impervious flooring in kitchen/serving area
Ceiling	exposed structure

(d) Colors

Walls	off-white
Accents	warm primary colors

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FURNITURE & EQUIPMENT SCHEDULE - SNACK BAR

Utility Requirements

A	Trash Receptacle		
B	Dining Table		
C	Dining Table		
D	Dining Table		
E	Chairs		
F	Booths		
G	CoinBill Changer	E	
H	Skill Machines (3)		
I	Pinball Machines (4)	E	
J	Juke Box	E	
Food Service Equipment:			
1.	Tray Lowerator		
2.	Refrigerated Case Line	E	D
3.	Hot Food Unit (w/sneeze guard)	E	
4.	Open Shelving Counter		
5.	Lowerator Stand (drinking glasses) w/12" pass-through overshell		
6.	Paper Cup Dispenser stand		
7.	Canned Beer Cooler (w/12" pass-through overshell)		
8.	Beverage Dispenser Stand		
9.	Dispenser Stand		
10.	Party Case		
11.	Lowerator Stand (for paper cups, china cups and saucers)		
12.	Urinal Counter Stand, Dual Drip Pans		
13.	Cashier stand	E	
14.	Tray Slide		
15.	Cash Register		
16.	Coffee Urn (Dual Dispenser)	E	C W
17.	Hot Chocolate Dispenser	E	C W
18.	Bulk Milk Dispenser	E	
19.	Milkshake Machine	E	
20.	Tea Dispenser	E	
21.	Combo Carb/Homocarb. Drink Dispenser	E	C W
22.	3 Compartment Sink (w/3rd compartment immersion heater)	E	C W HW
23.	Ice Dispenser	E	
24.	Ice Cuber/ Machine	E	CW
25.	Refrigerated Base w/overshell	E	D
26.	Pizza Oven	E	
29A.	Deep Fat Fryer	E	
30.	Griddle	E	
Customer Service:			
31.	Hot Plate		E
32.	Cold Food Make-Up Table (w/overshell)		E
33.	Work Table		
34A.	Work Table		
34B.	Bench Mixer w/stand		
40.	Storage Rack		
41.	Slicer		
42.	Vegetable Sink w/strainer disposer		E CW HW
43.	Storage Cabinet		
44.	Walk-In Dual Temp Box		
45.	Rack Dolly		
46.	Dish Dolly		
47A.	Clean Dish Table		
48A.	Dishwasher		
48B.	Soiled Dish Table		
50.	Busing Cart		
52.	Cream Dispenser		
54.	Condiment Table		E C W
56.	Immersion Heater (for Item 23)		E
60.	Dish Cart		
66.	Intra-Red Warmer		E
67.	Storage Shelving		
68.	Water Tanks (for Item 22, w/underfloor conduit and line connection)		
71.	Portable Trash Receptacle		
72.	Server Chair		
74.	Writing Desk		
76.	Print Cabinet		
78.	Safe		
79.	Wall Lockers		
79.	Waste Disposer		
80.	Dispenser Rinse Booster Heater		
81.	Pressure Fryer		
82.	Char-Broiler		
86.	Menu Board		
87.	Convection Oven		
88.	Food Warmer		
CODE: E = Electricity			
CW = Cold Water			
HW = Hot Water			
D = Drain			

Figure 4-31 Snack Bar Furniture & Equipment Layout

4-6 REFRESHMENT ACTIVITIES (continued)

c. AMUSEMENT CENTERS.

(1) **Function.** Amusement centers provide limited food and beverage service with a large area for coin operated skill and pinball machines where a permanent exchange food facility is, or will be, available in the immediate area on installations without a training mission. Activities include consuming food and drinks – primarily pizza and beer – and playing games.

(2) **Participants.** Small groups of people from 1 to 6 totaling approximately 100-150 people.

(3) Size.

Overall

27,800 SF Center

Game area	Dining area	Preparation
1,500 SF	1,000 SF	700 SF
Space/Unit	12 SF per diner	

(4) **Relationships.** Locate the amusement center adjacent to and immediately accessible to the lobby and terrace and near toilet rooms. All other areas should be secured from the amusement center after the Recreation Center closes. Locate the amusement center away from the active game area.

Amusement centers differ from snack bars in that there is a limited menu, usually beer and pizza, which requires a smaller dining area and preparation space and an increase in the game area.

(5) **Design Considerations.** The amusement center is the second largest activity in area in the Recreation Center, and although it is an administratively and physically independent section except at the lobby, the amusement center should be visually related to other

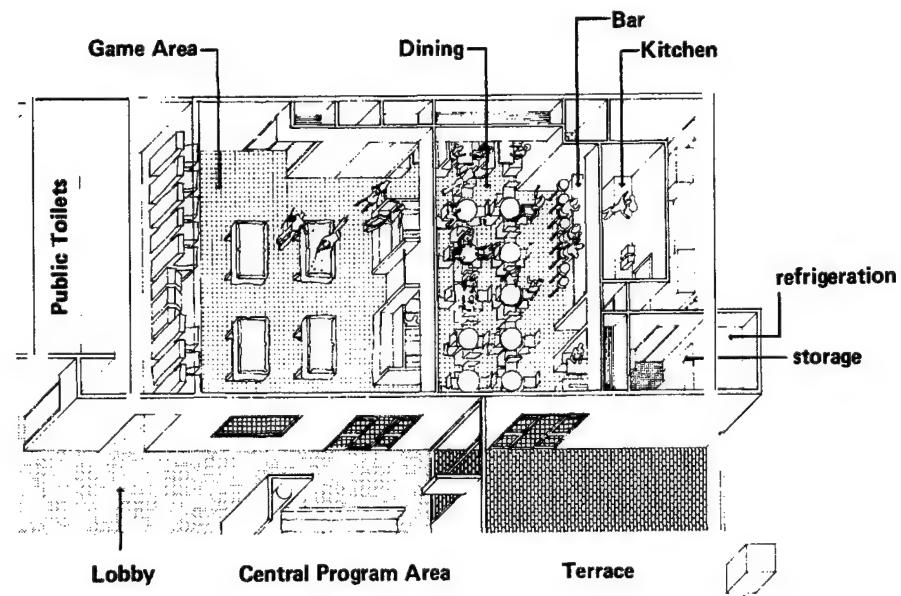


Figure 4-32 Amusement Center

activities. Eating areas defined by transparent partitions should overlook the central program area and terrace. Internally the areas should be separated by a decorative and booth-height screen wall. Windows should be maximized within energy conservation limits, to provide a view to the outside. In addition, a variety of shaded and sunny eating areas, both inside and outside, should be created.

Cross traffic through the dining area should be minimized and directed along clearly defined paths.

HQ AAFES Engineering Division should be requested to participate in the coordination of food service activities during the preliminary or concept stages of planning. Requests for coordination should be directed to HQ AAFES, Attn: EN-A, Dallas, Texas 75222.

AAFES will provide detailed Furniture and Food Equipment layouts with an equipment list stating power and utility requirements. General guidance on technical requirements and interior requirements follows.

(6) Technical Requirements

(a) Illumination

Level	30 ftc, dining and kitchen areas
	50 ftc, game area
	70 ftc, serving area
Type	incandescent; direct in serving lines, indirect in dining area
	fluorescent; indirect in kitchen and game area
	provide sanitary fixtures in kitchen and serving line
Control	local switch; dimmer control in dining area

(b) Power

Outlets	1 per wall in dining area; 1 per game see diagram for kitchen and serving areas
Special	clock outlet 2' below ceiling, above serving line
Total electric load	120/208v 3Ø, 4 wire
Capacity	480 amps minimum (coordinate with AAFES)

(c) Plumbing

See diagram (coordinate with AAFES)

(d) HVAC

Summer 78°DB; 65°WB; RH 50%
Winter 65°-70° dining area; 66° kitchen
Air changes 15 per hour, dining area
25 per hour, kitchen

(e) Communications

	Public	Kitchen
Noise criteria	PNC 35	PNC 45
Sound level	38 dB	52 dB
Ave coef of absorp	0.30	0.25-0.40
Transmission (STC)+43 dB		+43 dB

(f) Critical Dimensions

See diagram (coordinate with AAFES)

(7) Interior Requirements

(a) Equipment

See diagram (coordinate with AAFES)

(b) Furniture

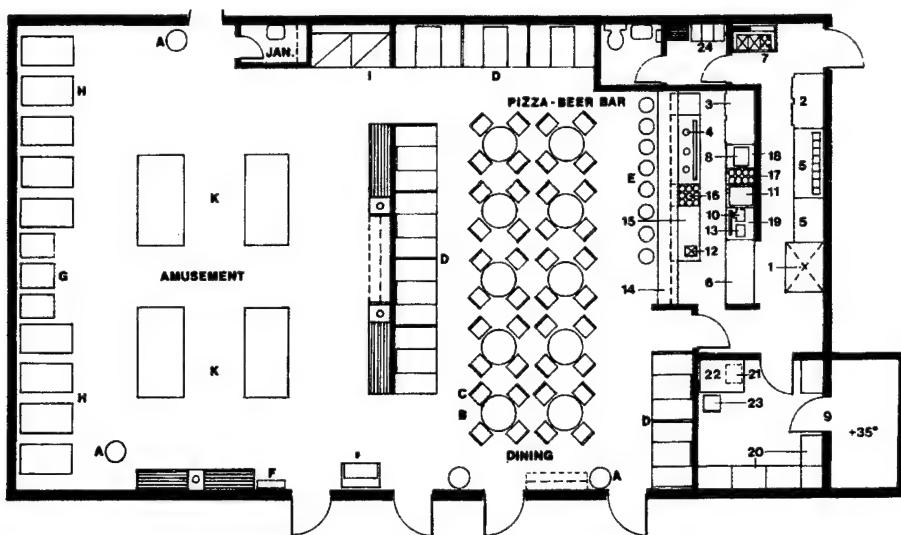
See diagram (coordinate with AAFES)

(c) Finish Suggestions

Walls	vinyl covered drywall, dining area
Floors	sheet vinyl or epoxy resin in dining area; impervious flooring in kitchen/serving area
Ceiling	exposed structure

(d) Colors

Walls	off-white
Accents	warm primary colors



FURNITURE & EQUIPMENT SCHEDULE – AMUSEMENT CENTER

Dining Room & Amusement Equipment:	Utility Requirements	Pizza/Beer Bar Equipment:	Utility Requirements
A Trash Receptacle		9. Walk-In Refrigerated Box	E D
B Dining Table		10. Noncarbonated Drink Dispenser	E CW
C Chairs		11. Ice-Maker/Dispenser	E CW
D Booths		12. Cash Register	E
E Bar Stools		13. Coffee Brewer	E
F Coin/Bill Changer	E	14. Bar Counter	
G Skill Machines (3)	E	15. Service Stand	
H Pinball Machines (9)	E	16. Filler Top w/12 paper cup dispensers	
I Vending Machine/Candy	E	17. Filler Top w/8 paper cup dispensers	
J Vending Machine/Cigarettes	E	18. Service Stand	
K Pool Tables (4)		19. Urn Stand	
L Cue Rack		20. Storage Shelving	
M Juke Box	E	21. Safe	
Pizza/Beer Bar Equipment:		22. Office Table	
1. Pizza Oven	E	23. Swivel Chair	
2. Reach-In Refrigerator	E D	24. Wall Lockers	
3. Display Refrigerator	E D	CODE: E = Electricity CW = Cold Water HW = Hot Water D = Drain	
4. Draft Beer Dispenser	E		
5. Refrigerated Pizza Make-Up Unit	E D		
6. Pass-Through Shelving Counter			
7. 3 Compartment Sink (w/immersion heater)	E CW HW		
8. Microwave Oven	E		

Figure 4-33 Amusement Center Furniture & Equipment Layout

4-7 SERVICE ACTIVITIES

a. MAINTENANCE AREAS.

(1) **Function.** To house those activities that comprise the physical maintenance of the Recreation Center. The activities consist of delivering supplies and equipment, removing trash, maintaining plumbing, mechanical equipment, parking and maintaining the landscape.

(2) **Participants.** Staff, maintenance and delivery personnel and patrons.

(3) **Size.** As required; mechanical rooms to be sized to meet the needs of the equipment housed.

Loading docks 80 SF minimum
Service area for kitchen 100 SF minimum

(4) **Relationships.** Utilities should be located near the platform and kitchen loading areas and common driveway to centralize service-related activities and to maximize efficiency of service to the building. Trash removal for the various activities should occur at the appropriate loading area.

(5) **Design Considerations.** Mechanical equipment rooms will be enclosed, securable, and entered only from outside the building.

Loading entrances are required at the platform, food preparation area, and mechanical equipment room to facilitate maintenance activities and the loading and unloading of supplies.

Siting considerations based on operational requirements will govern the placement of dumpsters for garbage collection. The location and orientation of the dumpster will be compatible with the design characteristics of the container and the loading vehicle, including turning and maneuvering radius requirements. Dumpsters should be located at the rear of a building, within a service area, or where they can be adequately screened with planting or fencing.

The final configuration and size of the mechanical equipment room should conform to an appropriate arrangement of the equipment actually selected. See illustrative building plans for utility requirements specifically related to each size facility.

(6) Technical Requirements

(a) Illumination

Level 10 ftc
Type incandescent utility fixtures
Control local switching

(b) Power

Outlets 1

(c) Plumbing

As required

(d) HVAC

Summer none
Winter 60°
Air changes 0

(e) Communications

None

(f) Acoustics

None

(g) Critical Dimensions

As required

(7) Interior Requirements

(a) Finishes

Bare structure

4-7 SERVICE ACTIVITIES (continued)

b. PUBLIC TOILETS.

(1) Function. To house personal hygiene activities in a private and sanitary manner.

(2) Participants A variable number of staff, patrons, and patrons' guests.

(3) Size. The toilet areas will be sized to house the number of fixtures required by DOD 4270.1-M and TM 5-810-5, based on the aggregate number of occupants for which the Center is designed. This figure is derived from the maximum number of patrons that the Center can accommodate, who are engaged concurrently in various activities in different spaces including central program, small group, refreshment, special interest, and administrative areas.

The ratio of fixtures for men and women should be developed by the using agency according to installation population factors such as the potential number of female military and civilian personnel, and use patterns of the Center such as the potential number of female visitors.

Approximate overall sizes

12,700 SF Center	450 SF
19,800 SF Center	600 SF
27,800 SF Center	720 SF

(4) Relationships. The public toilet area should be adjacent to the lobby area and near the control center, AAFES refreshment and game area, and the special interest area. There should also be easy access from ITT and the telephone lounge. The entrance to the toilet areas should be visible from the control center.

(5) Design Considerations. To facilitate the use of public toilets when the Center is partially opened (e.g., special interest, ITT, refreshment areas), they should be designed in conjunction with the entry/lobby.

The interiors should be laid out with vestibules to provide privacy. In the women's room this vestibule should be developed as a small seating lounge.

A minimum of one fixture in each area will be accessible by the physically handicapped.

All fixtures shall be easy to maintain and operate, and will be equipped with water saving valves. Water closets shall be wall-hung and enclosed in ceiling mounted metal enclosures; valves will be mounted 39" above floor to minimize damage from kicking. Lavatories shall be enameled cast iron and be built into a counter. Urinals shall be wall-hung and enclosed with metal screens. All accessories and fittings will be tamper-proof.

Finishes should be impervious to water and easy to maintain.

(6) Technical Requirements

(a) Illumination

Level	30 ftc; mirrors 50 ftc
Type	direct fluorescent
Control	switch at control desk

(b) Power

Outlets	1 per wall 1 at lavatories mtd at counter height
---------	---

(c) Plumbing

As required for fixtures

(d) HVAC

Summer	78°DB; 65°WB; RH 50%
Winter	68°
Air changes	20 per hour

(e) Communications

P/A	1 speaker station
Sound	1 speaker station

(f) Acoustics

Noise criteria	PNC 40-50
Appropriate sound level	47-56 dB
Ave coef of absorption	0.50
Transmission (STC)	+50

(g) Critical Dimensions

WC stall	2'-8" x 5'-0"
Aisle	5'-0"

(7) Interior Requirements

(a) Equipment

Paper towel dispensers, soap dispensers, toilet paper holders, mirrors, trash

receptacles, feminine napkin dispensers
and receptacles, plumbing fixtures as
required

(b) Furniture

Built-in lounge seats in vestibule areas

(c) Finish Suggestions

Walls **epoxy painted drywall or
exposed glazed structural
tile**

Floors **ceramic tile or epoxy resin**
Ceiling **acoustical tile**

(d) Colors

Walls **off -white**
Floors **warm accent colors**
Accents **cool and warm primary
colors**

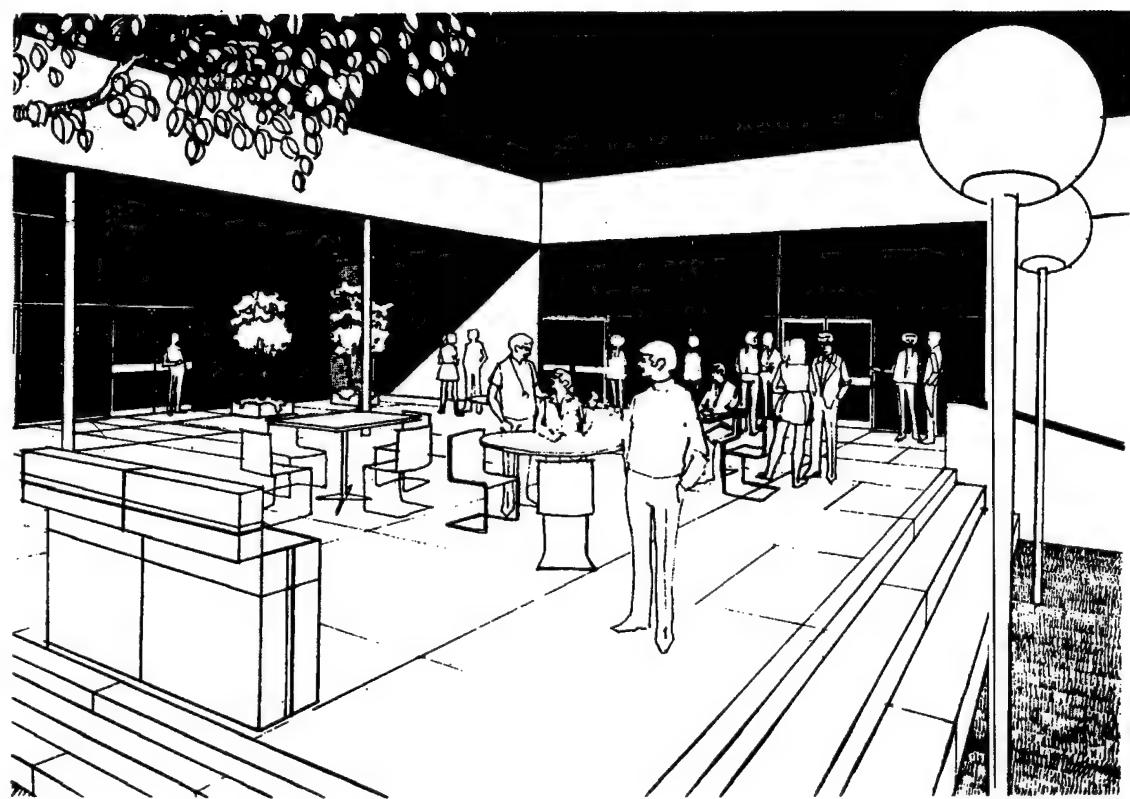


Figure 4-34 **Outdoor Activities**

4-8 OUTDOOR ACTIVITIES

a. TERRACE.

(1) **Function.** The terrace provides space for recreation activities that may occur outside the building during clement weather. Activities include dining, drinking, barbecuing, rap sessions, presentations, conversing, playing horseshoes, shuffleboard, dancing, etc.

(2) **Participants.** Small groups of 1-6 people, totaling up to 100 spectators and participants.

(3) Size.

Overall

12,700 SF Center	3,000 SF minimum
19,800 SF Center	3,600 SF minimum
27,800 SF Center	4,200 SF minimum

(4) **Relationships.** The terrace should be located adjacent to the central program area and the refreshment area so that it can be used in conjunction with the other activities taking place or as an overflow area.

The terrace should also be near the pantry in order that food may be prepared for barbecues and moved easily to the terrace for cooking.

Terraces should be oriented to take advantage of the sun and natural shade to gain maximum use during the year.

(5) **Design Considerations.** The terrace should include a stepped platform to permit

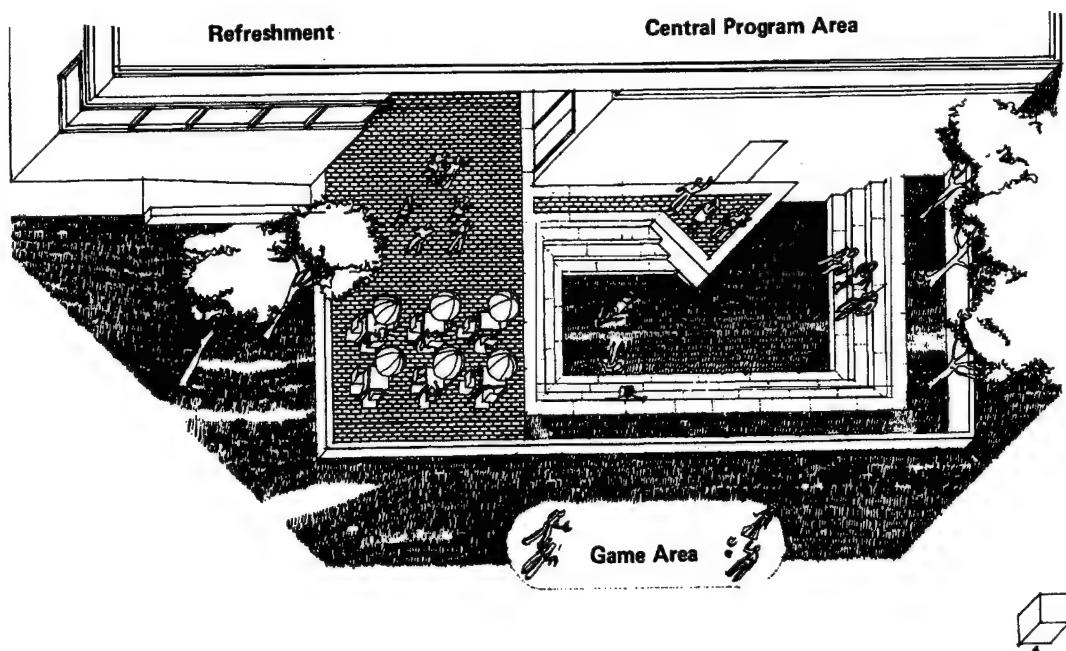


Figure 4-35 Terrace

Design Guide: Recreation Centers – Individual Space Criteria – January 1976

outdoor presentations to occur, with terraced areas for seating and tables, and a covered area for shade during the warm months.

Active game areas such as shuffleboard should be provided approximately 15 feet away from the building and oriented away from any large glass areas. Also, they should be located on a lower level so that the building is protected by the steps.

Provision should also be made for the installation of barbecue grills.

Appropriate landscaping and planting should be used to define areas and enhance their character.

(6) Technical Requirements

(a) Illumination

Level	10 ftc
Type	waterproof incandescent
Control	local switch

(b) Power

Outlets 2 waterproof receptacles

(c) Plumbing

Hose babb

(d) Communications

P/A	1 station
Sound	1 station, controlled from interior of central program area

(7) Exterior Requirements

(a) Furniture

Built-in benches

(b) Finish Suggestions

Brick or stone pavers

4-8 OUTDOOR ACTIVITIES (continued)

b. ENTRY COURT.

(1) *Function.* The entry court serves to organize pedestrian entry into the building, provide a visual focus to the Center from the surrounding area, and identify the Center. Activities include entering and exiting the Center, with small scattered groups informally conversing.

(2) *Participants.* Varying in number from 1 to 500.

(3) *Size.*

Overall	
12,700 SF Center	200 SF minimum
19,800 SF Center	250 SF minimum
27,800 SF Center	300 SF minimum

(4) *Relationships.* The entry court should be connected to the pedestrian circulation system of the installation and the parking lot. In severe climates, consideration should be given to a covered connection to the drop-off area in the parking lot. The entry court should lead to the building entry and telephone lounge.

The entry should be separated from the service court.

(5) *Design Considerations.* The entry court, to a great extent, provides the visual identity of the Center and should have suitable graphics and identifying symbols. The entry court

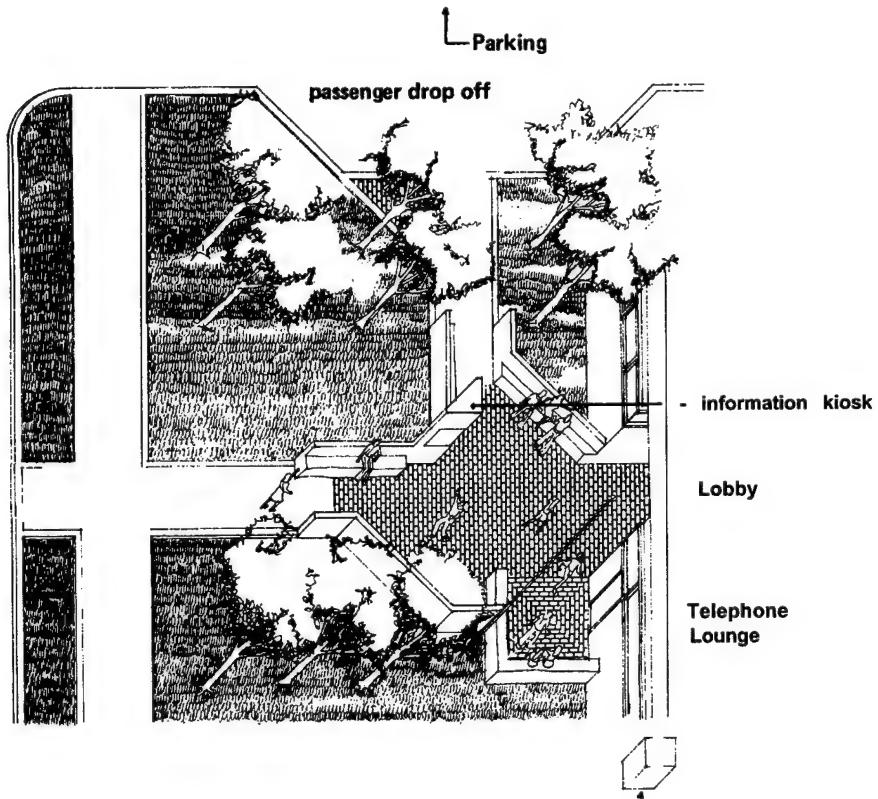


Figure 4-36 Entry Court

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should focus pedestrian movement into the Center while providing areas for small groups to converse when leaving without interfering with traffic.

Landscaping and planting should be provided to develop a pleasant and attractive entrance to the Center. Care should be taken not to obscure vision into the Center from the exterior or into the parking lot from the entry court.

(6) Technical Requirements

(a) Illumination

Level	5 ftc
Type	waterproof incandescent, area
Control	automatic time switch at control desk

(b) Power

Outlets 1 waterproof receptacle

(c) Plumbing

Hose bibb

(d) Communications

P/A	1 speaker station
Sound	1 speaker station

(7) Exterior Requirements

(a) Equipment

Center identification sign
Announcement board

(b) Furniture

Built-in seating

(c) Finish Suggestions

Brick or stone pavers

4-8 OUTDOOR ACTIVITIES (continued)

c. PARKING.

(1) **Function.** This area serves to store vehicles of users and recreation services; for occasional use as a program space to exhibit antique or custom cars, or motorcycle events. Activities center around driving and parking vehicles and walking to and from the Center.

(2) **Participants.** Small groups of 1-6 people totaling approximately 400 people.

(3) **Size.** Non-organization vehicles: Currently, parking must be provided for 2% of the enlisted population served; as outlined in DOD Manual 4270.1-M. If an analysis of parking requirements demonstrates that the following are inadequate, then a space exception with appropriate justifications should be submitted through command channels for approval.

Overall	No. of Cars	Area
12,700 SF Center	40	12,600 SF
19,800 SF Center	80	25,200 SF
27,800 SF Center	100	31,500 SF
Space/Unit	315 SF per car	

(4) **Relationships.** The parking area should be adjacent to the entry court and connect to the service drive to minimize paving requirements. Walking distance from a parked car to the entrance should not exceed 300 feet. Care should be taken to minimize mixing of service traffic with visitor traffic.

(5) **Design Considerations.** Parking areas should be designed for easy entrance and exit, and shall provide 90 degree parking whenever practicable.

Vehicular entrances to parking area should be a minimum of 100 feet from any traffic intersection.

Parking area should be laid out to provide an efficient service arrangement for deliveries and trash removal and safe, convenient and pleasant pedestrian areas.

There should be a drop-off area at the entrance to the building.

Parking aisles and main walks should point toward the building for safety and convenience

of pedestrians. Parking provisions for the physically handicapped shall be provided nearest their trip designation. The design features shall include depressed curbs, ramps, paved walkways and special parking stalls to accommodate the operation of wheel chairs from either side of the parked vehicle. Care in planning must be exercised so that individuals in wheel chairs and persons using braces and crutches are not compelled to wheel or walk behind parked vehicles.

Planting in medians and large islands should be provided to screen and alleviate the bleak effect of broad expanses of paving, to help identify the traffic and parking patterns visually, and to provide an aesthetic balance between these areas and the building.

Recognition should be made of the growing demand of bicycle usage at Recreation Centers. Coordination is required with the using service to determine the magnitude of traffic flow and to anticipate needs for bicycle facilities. If provisions for bicycles are justified and parking in needs have been established by the using service, bicycle racks shall be provided near the door, of the trip destination, well away from any vehicular traffic congestion and parking.

Provide facilities for motorcycle parking in coordination with the using service.

(6) Technical Requirements

(a) Illumination

Level	5 ftc
Type	pole mounted long-life quartz tubes
Control	automatic time switch at control desk

Directional reflectors to prevent or diffuse objectionable illumination spillage on surrounding areas are required.

(b) Plumbing

Hose bibb

(c) Surface

Paving area: bituminous paving

Walks: concrete

CHAPTER 5

SPATIAL ORGANIZATION

5-1 OBJECTIVES

The Recreation Center should be spatially organized to encourage social interaction and user participation; to allow many diverse activities to occur simultaneously; and to facilitate administrative control of the Center. This Chapter describes spatial organizational principles that may be employed in the development and review of designs. A principle is defined here as a rule exemplified in the organization and layout of a building design. In order to provide guidance on how individual spaces and design elements go together, spatial organizational principles are expressed (and illustrated) as typical rules which describe how individual spaces go together to form functional areas, and how functional areas go together to form a building design.

5-2 PRINCIPLES

Spatial organization must be based primarily on the interrelatedness of activities, maximum flexibility of the Center, successful adaptation to site and climate variables, and possible Center expansion. These variables will be affected by achieving economic construction and mechanical systems layout, maintaining user safety and facility security, incorporating site amenities, and providing for use by the physically handicapped.

a. **INTER RELATEDNESS OF ACTIVITIES.** Activities should be grouped to maximize desirable effects (accessibility, control, multi-use) or separated to minimize conflicts (noise, activity incompatibility).

b. **FLEXIBILITY OF USE.** The spatial organization must allow the simultaneous occurrence of many diverse activities, from planned activities to spontaneously self-generated activities, by diverse groups of people.

Activity areas must be arranged to encourage casual interaction by using the transitional areas

for lounges and waiting areas and by enabling participants to see from one area into another.

c. **ADAPTATION TO SITE & CLIMATIC VARIABLES.** The spatial organization of a Recreation Center must consider the site variables (size, shape, contours, orientation, views, and natural features) and climatic variables (severe or temperate). For example, a Center which is to be constructed on a site with natural beauty, proper solar orientation and temperate climate may be outwardly oriented, with the activity spaces focused toward the outside of the building; if the Center is to be built in an area with a severe climate and generally unattractive surroundings, its spatial organization should be focused toward the interior of the Center.

d. **EXPANSION.** If a Center exhibits a strong likelihood for expansion of activities, the Center's spatial organization should be planned to permit a functional growth by increasing the number of spaces or by enlarging the existing spaces. As a Center expands, the necessity for flexibility decreases, because space usage is determined by administrative control.

5-3 CRITERIA

a. **ACTIVITY ANALYSIS.** Four variables which affect spatial organization should be analyzed.

(1) *Physical Access.* Physical access is the most important factor in spatial organization; its primary concerns are convenience of circulation, ease of administrative control, and potential for social interaction.

(2) *Acoustics.* The next most important criterion is acoustics, or the generation of disruptive noise by an activity. If a conflict arises between accessibility and acoustics, the accessibility requirements should govern location with the acoustical problem being treated technologically.

(3) **Visual Access.** The third factor governing spatial organization is visual access which is the capability of seeing from one area to another. This is important for administrative control and increasing awareness of alternative activities.

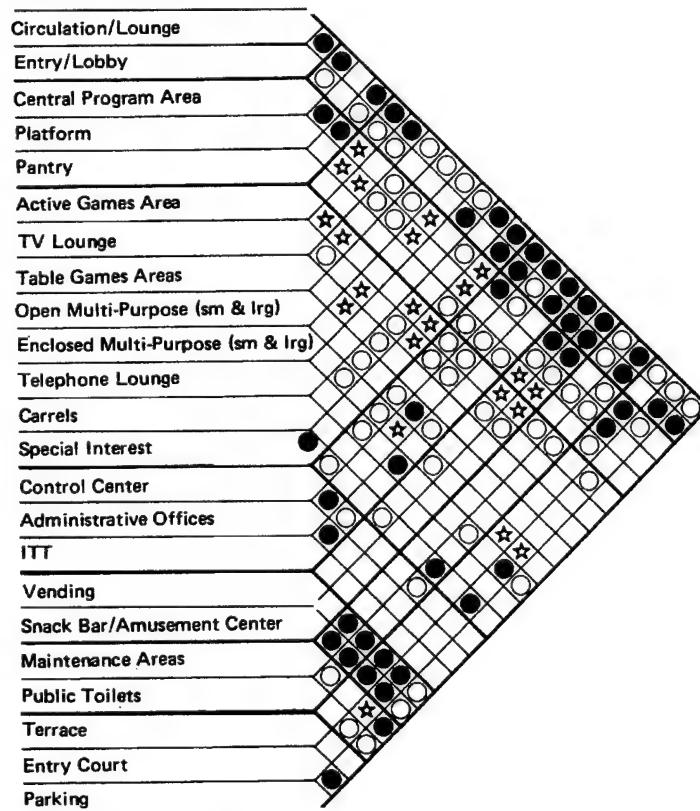
(4) **Compatibility.** Compatibility of activities, the fourth criterion, measures the level of interference one activity can tolerate from another without disturbance; gives consideration to requirements for privacy, concentration, and attention of the users; conflicting elements are noise, physical activity, and administration policy.

D. AFFINITY CRITERIA. These results of an activity analysis are summarized in Table 5-1, Affinity Matrix, which presents the adjacency

requirements for each space. The purpose of this matrix is to provide assistance in the establishment of priorities for planning spatial organization. If trade-offs are required because of design constraints, they can be evaluated in terms of the effect they will have on the function of the Center. Values have been assigned to spatial relationships as follows:

- ◆ Necessary – the activity should be located immediately adjacent to other activities.
- ◇ Desirable – the activity should be located near other activities.
- Unimportant – location is not a factor.
- ❖ Undesirable – the activity must be remotely located or acoustically separated from another.

Table 5-1. Affinity Matrix.



5-4 CONCEPTS

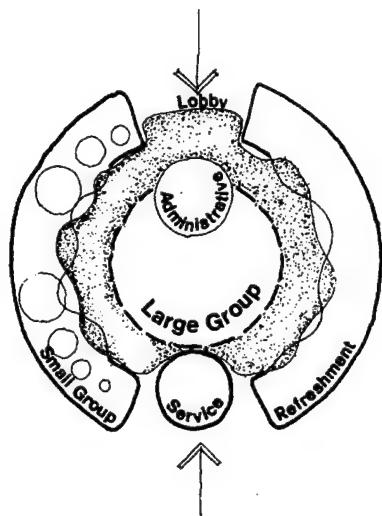
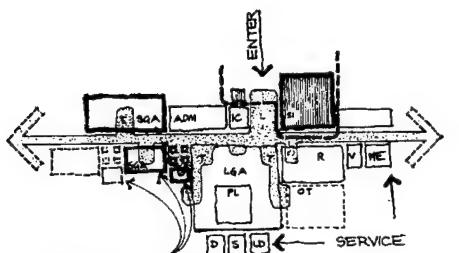


Figure 5-1 Spatial Organization Conceptual Diagram

a. **ORGANIZATION.** Based on the activity analyses, the Recreation Centers should be spatially organized to focus all small group activities on the central program area with the transitional spaces integrating the two elements. A hierarchy of characteristics should be established which orders the activities away from the central program area according to size – large to small; active to passive; communal to private. Highly used areas should be strategically located to draw users past new activities. This arrangement encourages movement, social interaction, and allows direct control of the greatest possible area and the largest number of people.

b. **SCHEMATICS.** Several basic spatial organization schemes can be developed by manipulating the transitional space. Each scheme is evaluated in terms of activity interrelationships, flexibility of use, adaptation to site and climate variables, and provision for expansion (see Table 5-2).

(1) **Linear.** The linear scheme is characterized by a single transitional spine along which activity spaces are arranged; central program area is centrally located.

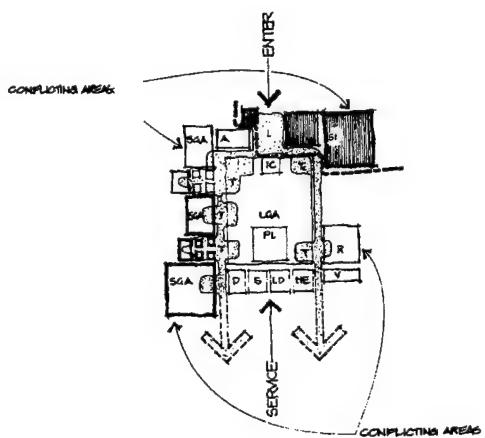


1 to 1 relationship of activities to circulation minimizing the number of adjacent relationships and consequently conflicts.

Linear plan maximizes distance between activities which facilitates noise control but inhibits visual control. However, in smaller centers the proximity of activities necessitates a technological approach to sound control as well as planning considerations.

Figure 5-2 Linear Scheme

(2) **Central.** The Central scheme places the central program area in a core position with small group activities encircling it; the transitional space separates the two elements.



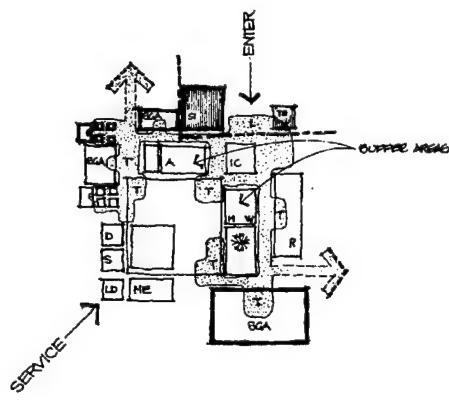
The large group activity area is central and separates conflicting small group activities. Since the large group area is adjacent to all other areas across the transitional area, opportunities for social interaction are maximized.

Figure 5-3 Central Scheme

Key

T	Transitional	PL	Platform
LGA	Large Group Activities	OT	Terrace
SGA	Small Group Activities	L	Lobby
SI	Special Interest	D	Dressing
ADM	Administrative	LD	Loading
IC	Control / ITT	TE	Telephone
R	Refreshment	S	Service
V	Vending	ME	Mechanical

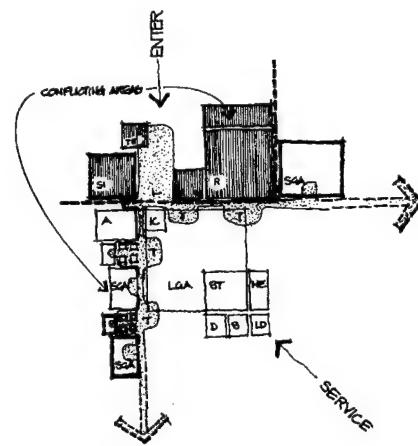
(3) Dispersed. The Dispersed scheme scatters spaces to reduce conflicts, uses enclosed spaces to buffer sound and separate open spaces. The transitional space acts as a decentralized link that both connects and separates activities.



Buffer activities separate the large group area from peripheral small group activities. This arrangement decreases opportunities for social interaction but allows diverse activities to occur within a relatively constricted area. Taking advantage of site conditions when possible, the roofs of buffer areas should become mezzanines or overlooks which visually connect peripheral areas and the large group area.

Figure 5-4 Dispersed Scheme

(4) Axial. The Axial scheme combines the intents of the Linear and Central schemes; the transitional space is divided into two axial paths around the central program area which separate incompatible small group activities.



The central large group area separates conflicting small group activities and is adjacent to most areas including the lobby across the transitional area. This arrangement should maximize opportunities for social interaction.

Figure 5-5 Axial Scheme

Design Guide: Recreation Centers – Spatial Organization – January 1976

Table 5-2. Spatial Organization Scheme Evaluation.

	LINEAR SCHEME	CENTRAL SCHEME	DISPERSED SCHEME	AXIAL SCHEME
Activity Interrelationships	<p>Facilitates noise control</p> <p>Inhibits visual control</p> <p>Works best with Centers of 12,700 SF or less</p>	<p>Separates conflicting activities</p> <p>Facilitates visual control</p>	<p>Sound control excellent</p> <p>Reduces visual/physical access to all spaces</p>	<p>Separates areas with conflicting acoustical requirements well</p> <p>Visual/physical access facilitated</p>
Flexibility of Use	<p>More opportunities for social interaction</p> <p>Highly flexible</p>	<p>Maximum opportunity for social interaction because of visual and physical access</p>	<p>Spontaneous social interaction hampered</p> <p>Houses many diverse activities well with no dysfunctions</p>	<p>Locate popular activities at ends of axes to encourage movement past new activities</p>
PRINCIPLES				
Adaptation to Site	<p>Can be focused outwardly</p> <p>Requires solar path orientation</p> <p>Suitable for temperate climates</p> <p>Natural cooling results from orientation to prevailing winds</p>	<p>Focused inwardly</p> <p>Suitable for severe climates</p> <p>Plan level changes carefully for sloped sites</p>	<p>Similar to site adaptation for Central Scheme</p>	<p>"Functions well in all climates</p> <p>Adaptable to any site condition</p>
Expansion Potential	<p>Can be expanded at either end</p>	<p>Restrictive</p>	<p>Limited</p>	<p>Expansion can occur at ends of axes</p>

CHAPTER 6

CASE STUDIES

6-1 GENERAL

This chapter presents case studies – programs for five hypothetical Recreation Centers, including Centers of 12,700 SF, 19,800 SF and 27,800 SF; a Center in “found space” (an existing building, not in use) and a remodeling of an existing standard design.

These studies are not to be construed as definitive designs but as guides to demonstrate how solutions were derived in specific contexts. The procedure, as well as the information presented, is in an abbreviated form to show a few of the important considerations. An analysis in greater depth with more detailed information would be required to actually plan and design a Recreation Center.

6-2 12,700 SF CENTER

a. **SITUATION.** This installation is located in the southwestern United States between two medium-size towns and approximately 45 miles west of the state capital. The post consists of 1,500 enlisted personnel and has no training units. The surrounding towns provide typical leisure activities as well as unique opportunities for skiing, backpacking, and rock hunting in nearby mountains.

Currently the Recreation Center is housed in a temporary building which is scheduled for demolition to build new troop housing. Therefore, a new Recreation Center is to be built as part of a small community center located between the married enlisted men's and non-commissioned officers' housing and the barracks complex. Other facilities in the complex are an Arts and Crafts Center, Movie Theater, a Post Exchange with complete food service, and a library.

The post area climate is hot and arid with an annual normal temperature range of 35°-105° F; annual precipitation, 7.20 inches; prevailing southwesterly breezes in summer, 18 mph.

The Center site is long and narrow with the

main post road on its southern property line. There are views of distant mountain ranges from the site.

b. **CURRENT USAGE.** There are an average of 150-200 people in the existing Center at peak hours of use during weekdays; when there are large group activities on weekends, attendance increases to about 300-350 people. The Center is operated by two full-time staff members.

A full range of regular programs is provided at the Center as well as a small number of Special Interest programs and a recently initiated Information Tour & Travel program.

It is conjectured that use of the Center will remain fairly constant in the future, but there is a possibility that the installation will grow.

c. **PLANNED ACTIVITIES AND PROGRAMS FOR THE NEW CENTER.** The following activities are anticipated for the new Center. These were planned on the expansion of current popular programs and the provision of new activities in which patrons have expressed interest.

(1) **Administrative.** The professional staff, involved in planning, supervising, and participating in all programs at the Center, is assisted by dependent and military volunteers who conduct some of the planned activities. A staff member operates the control desk and the ITT program.

(2) **Large Group.** Usually there will be three planned weekly large group functions – Friday night dances, Saturday night socials with live entertainment, and Sunday night films. Attendance will range from 200-250. In addition, there will be bi-weekly demonstrations of Kung-Fu, fencing, and other exhibitions which will have about 60-100 attendees. The Center will be used for non-recreational events such as unit parties in which about 200 people attend, as well as community activities such as blood drives.

(3) *Small Group.* During the week, patrons have displayed a great deal of interest in self-generated activities, especially billiards and card playing, which are expected to attract about 50 participants each in the new Center. There will usually be one card and pool tournament each week with as many as 50-60 entrants and spectators expected.

The Center also operates some informal classes on "cooking for fun" (15 people) and rock collecting (10 people). TV viewing is not as popular as other small group activities; it may draw 25 people per night. A rap session about social awareness topics will involve 20 people per week and an informal combo practice (5 persons playing, 15 spectators) will take place nightly.

(4) *Special Interest.* Groups currently meet three nights per week for coin collecting, skiing, and rock hunting. Since this program is relatively new, interest must be generated to increase participation from the 20 members each club has now. There is also a "slimnastics" class specifically for enlisted wives which meets in the early evening.

(5) *Refreshments.* Since the Center will be located within walking distance of a full service PX facility, the only refreshment activities which will occur are snacking during regular hours and special refreshments provided by the Center for special events and festivities.

d. **SPACES REQUIRED.** The following spatial requirements have been derived from current and planned Center activities and programs.

(1) *Administrative Offices.* As recommended in Chapter 4.

(2) *Large Group Activities.* The central program space should be sized to a maximum of 250 people for movies and dances:

Movies: $250 \times 8 \text{ SF/person} = 2,000 \text{ SF}$

Dances: $250 \times 15 \text{ SF/person} = 3,750 \text{ SF}$

Because some dance-related activities can occur in lounges (sitting out, socializing, taking refreshments), the central program space should be reduced by 20%.

During the week the central program space will accommodate a variety of self-generated activi-

ties such as chess, table games, letter writing, record and tape listening, small meetings, etc. and should be spatially divided into smaller configurations scaled to the group sizes.

(3) *Small Group Activities.* Small group space must be programmed to allow activities to overlap in each space; the central program area can be used weeknights to house larger activities (rap sessions, card tournaments, etc.).

One enclosed multipurpose space is required to house approximately 30 people involved in noisy activities (combo practice) and private activities (meetings and "slimnastics"). One open multipurpose space is required to house 10 people for recorded music listening, informal classes, and writing; four private carrels are also required.

Two TV lounges are required to accommodate 50 viewers for two local channels. Large TV events can be viewed in smaller lounges with portables or a large projection screen in the central program space.

(4) *Special Interest Programs.* Since these programs are new, they should occur in open areas such as the central program space, lounge areas, or multipurpose areas to attract new participants.

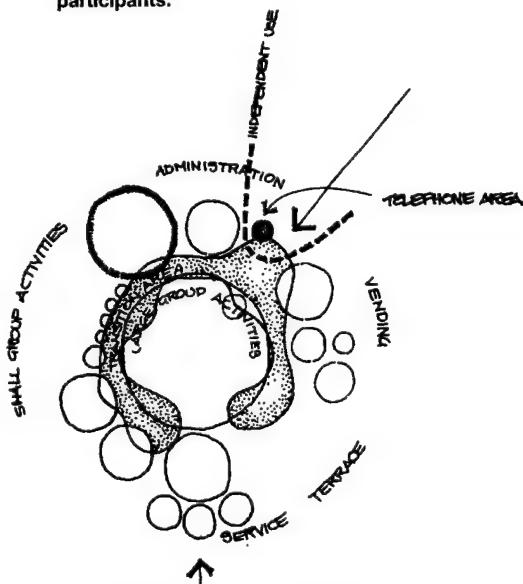


Figure 6-1 Spatial Diagram 12,700 SF Center

e. SUMMARY OF SPATIAL REQUIREMENTS.

Table 6-1. Spatial Requirements 12,700 SF Center

Administrative Spaces	
Information Tour & Travel	50
Control	150
Administrative Offices	400
Storage	250
Large Group Spaces	
Central Program Space	3,000
Platform	750
Dressing, Storage, Loading	600
Small Group Spaces	
Pantry	250
Telephones	100
Carrels (4)	120
Open Multipurpose	150
Enclosed Multipurpose	600
TV/Meeting	750
Active Games	1,490
Refreshment (AAFES Food Service & Games)	
Vending Machines & Games	850
Lobby	150
Service Spaces	
Public Toilets	450
Janitor's Closet	50
Net Total	10,160
Transition Space + Net to Gross @ 25% 2,540	
TOTAL (Excluding Mechanical Space) 12,700	

f. DESIGN SOLUTION. This solution is developed as an outwardly oriented, linear spatial organization pattern because of the site configuration and climatic patterns to permit constant ventilation during most of the year. Also, because of local climatic conditions, the building incorporates a number of terraces, provided for outdoor activities; these are located on the northern side of the building to reduce glare and heat.

Noisy areas (billiards and pingpong) are separated from the central program space by the enclosed multi-purpose space. The highly used billiards and eating areas are located at the opposite ends of the circulation spine to draw people past other activities.

The central program area is developed as a bilevel space. When used for dances, the lower area would serve as the dance floor and the upper area would be a lounge with tables and chairs. The pantry is located so that refreshment service during large group activities could use the upper level of the central space as a lounge. During movies and platform presentations, the two levels would afford better sight lines to viewers sitting in the rear. The stepped platform could be used for "in the round" seating for demonstrations and small presentations or as a lounge when no large group activities are in operation.

Two TV areas are developed to insure that a choice of channels would be available to the viewers.

The exterior of the building expresses its location in the Southwestern United States by reflecting the local, regional architecture and the local climate conditions in the choice of materials, the use of architectural detail, and the control of fenestration. The overall design is developed as a low, horizontal scheme that is emphasized by long blank walls, with a minimum of small punched openings, wide overhangs that cast strong shadows, and being clad with a single, unified material, stucco. A band of high windows surrounding the Center under the overhang allows diffused, reflected natural light to enter the building; in the central program space a raised roof section with a similar band of windows naturally lights this area; where needed, small square windows are located to provide vision to the exterior. As a contrast to the solidness of the rest of the facade, the entry is glazed to emphasize its openness, to be inviting to people entering, and to enable internal activities to be seen.

To reinforce "the building's horizontality and to extend its apparent size, wing walls are added to the terraces.

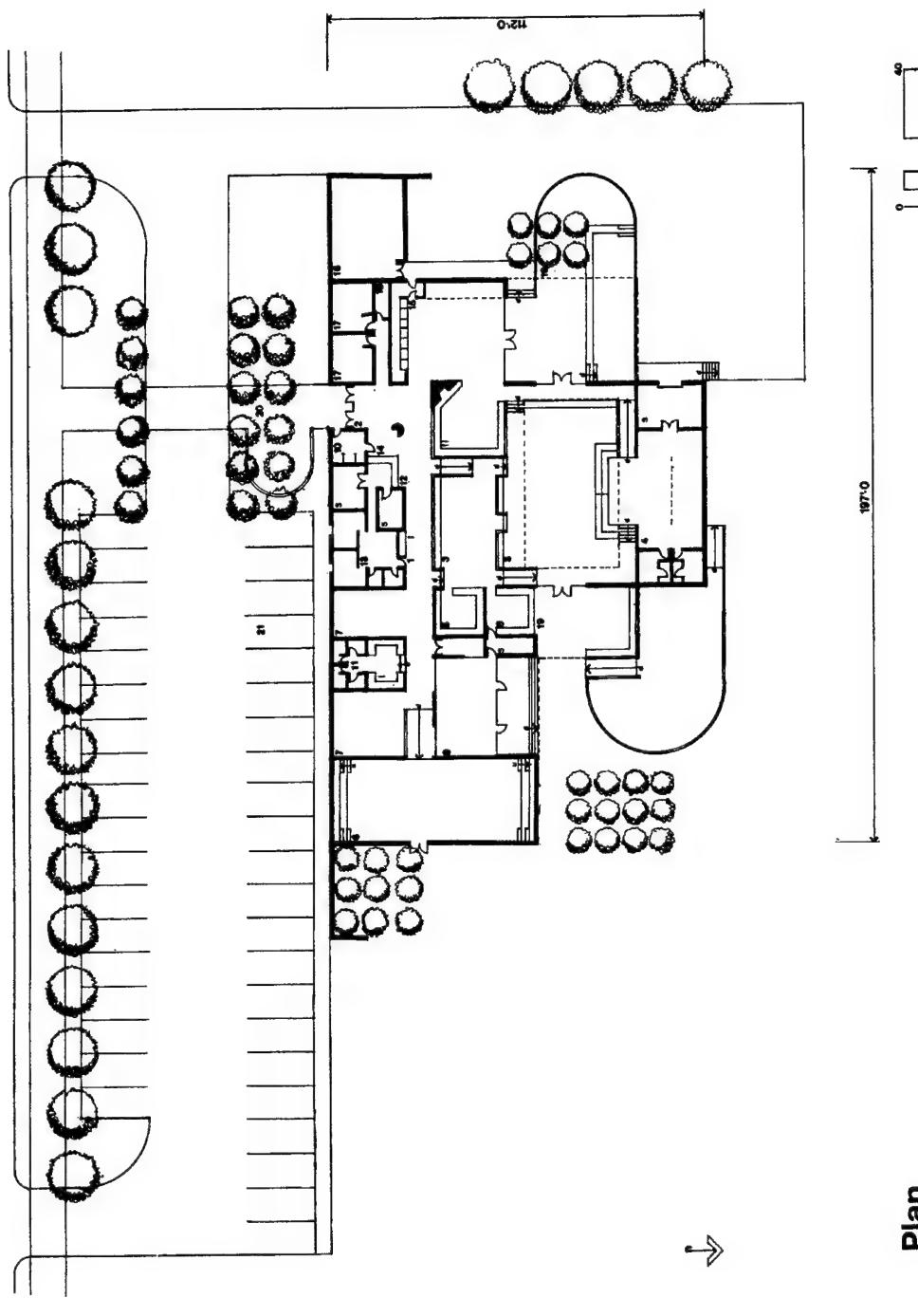
g. TECHNICAL SOLUTION. The structural scheme selected is a combination of long span and short span steel joists bearing on masonry walls. To reduce cost, these would be exposed in all large areas whose technical requirements would permit it; to present an orderly and

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attractive appearance, all joists would be oriented in the same direction.

Because of the climate – lack of rain – a flat roof (1/4" per foot of slope) with large overhangs was selected to reduce cooling loads. The exterior of the building will be faced with latex stucco to have the same visual quality as the regional adobe architecture. The fenestration of the building is maximized on the northern elevation and minimized on the southern to reduce solar heat build-up in the Center.

Figure 6-2 Plan 12,700 SF Center



Plan

12,700 SF Center

KEY

TRANSITIONAL ACTIVITY

- 1 Circulation/Lounge Space
- 2 Lobby

LARGE GROUP ACTIVITY

- 3 Central Program Area
- 4 Platform
- 5 Pantry

SMALL GROUP ACTIVITY

- 6 Active Game Area
- 7 TV Lounge
- 8 Open Multi-Purpose Area
- 9 Enclosed Multi-Purpose Area
- 10 Telephone Lounge
- 11 Carrels

ADMINISTRATIVE ACTIVITY

- 12 Control Center
- 13 Administrative Offices
- 14 ITT

REFRESHMENT ACTIVITY

- 15 Vending

SERVICE ACTIVITY

- 16 Mechanical
- 17 Public Toilets
- 18 Janitor's Closet

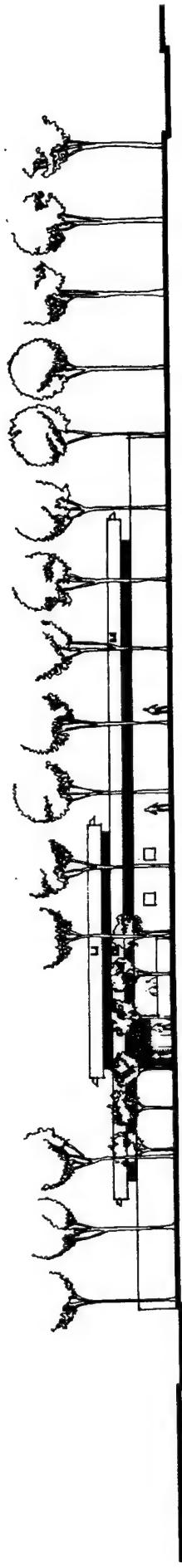
OUTDOOR ACTIVITY

- 19 Terrace
- 20 Entry Court
- 21 Parking

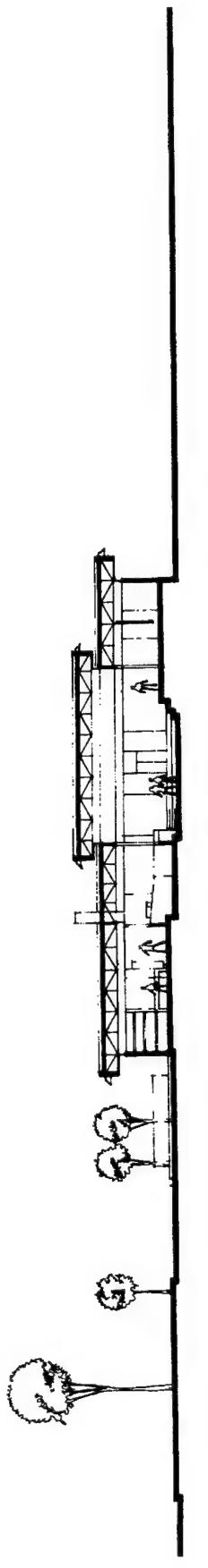
- storage
- lounge
- fireplace lounge

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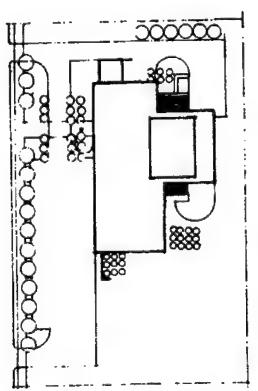
Figure 6-3 Elevation & Section 12,700 SF Center



Elevation



Section



Site Plan

6-3 19,800 SF CENTER

a. **SITUATION.** The fort is located in the middle northwestern prairies, approximately 150 miles from the nearest city; there are two small towns near the fort which have a sizable population of retired military personnel. The military population is 3,975, of which 2,075 are enlisted personnel, 70% being permanent party personnel and 30% advanced training personnel.

Since the surrounding area offers little in leisure or tourist facilities, most of the military community's recreation activities must be provided by the installation. Recognizing this need, the commander is requesting that a new community center be built to replace the obsolete and over-crowded temporary buildings now in use. This community center will have facilities for all recreation programs as well as post exchange, GED Center, theaters, guest house, and restaurant. The two existing Recreation Centers located in isolated temporary buildings will be demolished for new housing construction.

The climate of this area is severe: normal temperatures are 86° F in the summer and 0° F in the winter; annual extreme temperatures are 114° F and -45° F. Annual precipitation is 15.15 inches and the annual snowfall is 34.8 inches. The northerly winter winds average about 35 mph and the westerly summer breezes about 10 mph. Noon solar angle is 69° on the summer solstice and 22° on the winter solstice.

The site is within walking distance of the training area and is located across the main traffic artery from the post exchange and movie theater and east of the GED Center and guest house. The site is flat with the road on the western side and no significant features or views.

b. **CURRENT USAGE.** The Center is used by 300-500 people on weekdays and 750-1,000 on weekends; it is open from 1-10 pm daily except Sundays, when it is open from 10 am-10 pm. Because of the lack of other facilities, the Center will be highly used for non-recreational events during the morning hours.

c. **PLANNED ACTIVITIES AND PROGRAMS FOR THE NEW CENTER.**

(1) **Information, Tour & Travel.** ITT is used quite a bit to plan small group trips to urban areas and to arrange reduced fare accommodations at the hotels and will continue to be highly active in the new Center where the program will be enlarged.

(2) **Large Group.** The predicted attendance range for large group activities will be as follows: 200, square dancing; 300, bingo; and 400, socials. Large group activities also include films, dances, festivals, socials and exhibitions with attendance averaging approximately 250 people.

(3) **Small Group.** Games, tournaments, and TV viewing are the most popular and will have about 100 people watching the two local channels and about 75 people playing games and cards nightly. Record and tape listening, taping, and combo practice sessions are extremely popular also, with about 30 people anticipated to request ear phones or records nightly; informal combo sessions also will occur nightly and will involve about 10 patrons.

Enlisted wives have expressed an interest in starting sewing and home decorating classes, and some people exhibited an interest in starting ecology and antique collecting classes. Rap sessions were not attempted in the old Centers because of a lack of space, but soldiers have indicated that they would be interested; a poll revealed that 60 people would be extremely interested and 30 people moderately interested, so a rap session program is to be initiated in the new Center for about 50 people three times a week.

(4) **Special Interest.** Groups meet every weekday night. The bike riding club (30 members) meets Sunday afternoons; there is a motorcycle club (50 members); enlisted wives club (100 members); ski club (25 members); coin collecting club (30 members); and ecology club (30 members). Meeting activities range from lectures, exhibitions, work on projects, business meetings, and planned outside activities. Since the Special Interest Program is well organized and attended, it will definitely be included in the new facility and hopefully expanded.

(5) **Refreshment.** These activities center on a vending area with seating for 38 and electric games, as recommended by Army and Air Force Exchange Services.

d. **SPACES REQUIRED.** The following spaces have been derived from current and planned Center activities and programs:

(1) **Administrative.** Off ice space is required for three full-time staff members (as outlined in Chapter 4) with ITT spaces including work areas and counter space.

(2) **Large Group.** The central program space is planned to house its most extensive use, 300 people for bingo, which requires that all people be located in proximity to the platform.

$$300 \times 10 \text{ SF/person} = 3,000 \text{ SF}$$

Because dances and socials have as many as 400 participants, there should also be a lounge for 50 people:

$$50 \times 15 \text{ SF/person} = 750 \text{ SF}$$

(3) **Small Group.** These spaces should be sized in accordance with guidance presented in Chapter 4.

- 1 enclosed large space for informal combo sessions, group meetings, audio-visual presentations (600 SF)
- 2 enclosed small spaces for music practice, classes, and small meetings (150 SF each)
- 8 enclosed cubicles for recorded music listening and taping and writing; headphone jacks should also be provided in other lounge areas (30 SF each)
- 2 open multipurpose spaces for rap sessions, hobby activities, game playing, and card playing (1 @ 150 SF and 1 @ 600 SF)
- 1 pantry for refreshments and cooking class (250 SF)
- 2 TV viewing areas for 70 people; open on transition space for overflow:

$$70 \times 15 \text{ SF/person} = 1,050 \text{ SF}$$

active games areas should include the following:

Pingpong 2 tables@ 250 SF	= 500 SF
Billiards 6 tables@ 215 SF	= 1,290 SF
Electric Games	= 700 SF
Seating	= 210 SF

(4) **Special Interest.** The special interest room should be sized to hold 60 people who are in club meetings or working on projects:

$$60 \times 20 \text{ SF/person} = 1,200 \text{ SF}$$

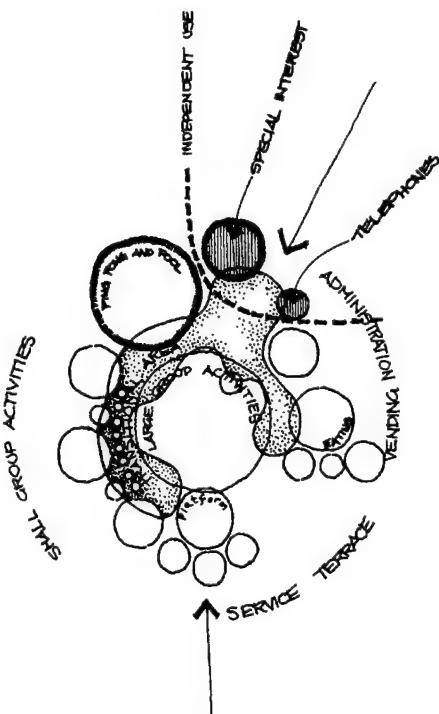


Figure 6-4 Spatial Diagram 19,800 SF Center

e. SUMMARY OF SPATIAL REQUIREMENTS.

Table 6-2. Spatial Requirements 19,800 SF Center

Administrative Spaces	
Information Tour & Travel	100
Control	300
Administrative Offices	500
Storage	350
Large Group Spaces	
Central Program Space	3,750
Platform	750
Dressing, Storage, Loading	800
Small Group Spaces	
Pantry	250
Telephones	200
Carrels (8)	240
Open Multipurpose (small)	150
Open Multipurpose (large)	600
Enclosed Multipurpose (small)	150
Enclosed Multipurpose (large)	600
TV/Meeting	1,050
Active Games	
Pingpong	500
Billiards	1,500
Electric Games (not AAFES)	700
Special Interest	1,200
AAFES Food Services & Games	1,150
Lobby	350
Service Spaces	
Public Toilets	600
Janitor's Closet	50
Net Total	15,840
Transitional Space + Net to Gross @ 25%	3,960
TOTAL (Excluding Mechanical Space)	19,800 SF

f. DESIGN SOLUTION. This Recreation Center is spatially organized in a central scheme which develops a greater envelope/enclosure ratio to aid in energy conservation. Because of the severe climate and the lack of site amenities, the building is inwardly oriented toward a complex central program area. The purpose of this interior form is to provide visual interest and to make the central space less formal and more inviting to the users. Also, this spatial organizational concept enables the

exterior of the building to be developed in a manner that achieves maximum energy conservation. This is accomplished by surrounding the building with earth berms and covering the roof with earth, which functions as insulation material, reduces exterior wall surface, and gives the Center a distinctive exterior appearance that fits the ecology of the area.

The central program space is a series of stepped levels which permit a number of smaller activities to coexist with a large group activity taking place in the center. The central space can be used as a "seating in the round" with the center of attraction in the lower level or "traditionally" with the speakers and performers on the presentation platform or as a series of small informal lounge areas. The stepped levels enable the viewers at the rear to have better sight lines. To provide natural light in the central program space, a cluster of skylight monitors is located above the stepped area forming a pool of natural light and pleasant ambience.

The popular small group activities are located at the extremes of the circulation paths to draw people through the Center and to isolate noisy activities from quiet ones.

The angular TV viewing room is developed with informal built-in stepped seating focused toward the screen to give everyone good visibility.

The control desk is projected out into the transition space to give greater visual access to all areas of the Center. The pantry relates positively to the administrative area, central program space, and terrace. The terrace is located on the south for greater usability with a covered area to reduce summer sun to the building.

This solution employs two different spatial configurations for the large multipurpose space. One is designed to house private meetings and combo practice and consists of a series of stepped platforms which surround central space; this space can also be used for lectures and meetings by having the speaker stand in the podium corner; the other is a flexible and open multipurpose space.

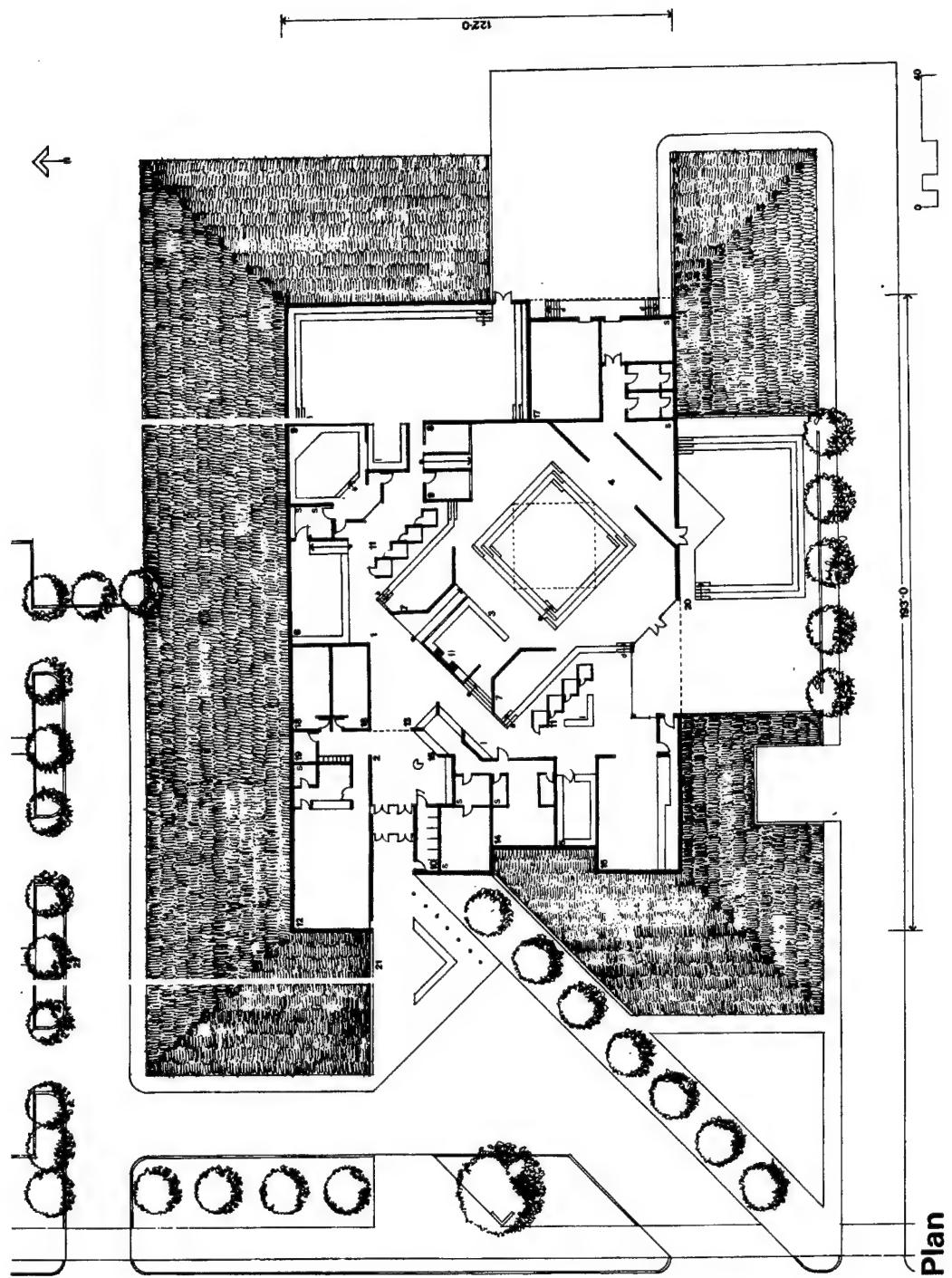
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The visual character of the Center is characterized by its location on the prairie with a low flat silhouette that blends into the natural qualities of the landscape. The earth berms are interspersed with light wells formed by wing walls where openings are required for vision or access and to add visual interest to the facade.

To draw people into the Center and to emphasize the entrance of the building a diagonal wing wall opens the berm to the entry and forms the entry court.

g. TECHNICAL SOLUTION. The structural concept is one central long-span steel joist construction over the central space, around which there is a short-span steel joist system over the enclosing small group spaces. Since the snowfall is moderate and the climate dry, a moderately sloping roof is appropriate, using earth-fill on the roof to serve as additional insulation. Because of acoustical considerations, the small group spaces should have a dropped acoustical ceiling. The exterior envelope would be an insulated masonry wall with a minimum of openings for fenestration.

Figure 6-5 Plan 19,800 SF Center



19,800 SF Center

KEY

TRANSITIONAL ACTIVITY

- 1 Circulation/Lounge Space
- 2 Lobby

LARGE GROUP ACTIVITY

- 3 Central Program Area
- 4 Platform
- 5 Pantry

SMALL GROUP ACTIVITY

- 6 Active Game Area
- 7 TV Lounge
- 8 Open Multi-Purpose Areas
- 9 Enclosed Multi-Purpose Areas
- 10 Telephone Lounge
- 11 Carrels
- 12 Special Interest Area

ADMINISTRATIVE ACTIVITY

- 13 Control Center
- 14 Administrative Offices
- 15 ITT

REFRESHMENT ACTIVITY

- 16 Vending

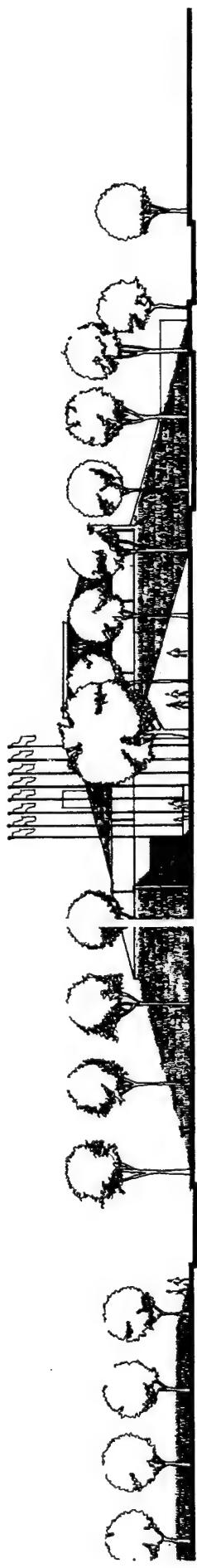
SERVICE ACTIVITY

- 17 Mechanical
- 18 Public Toilets
- 19 Janitor's Closet

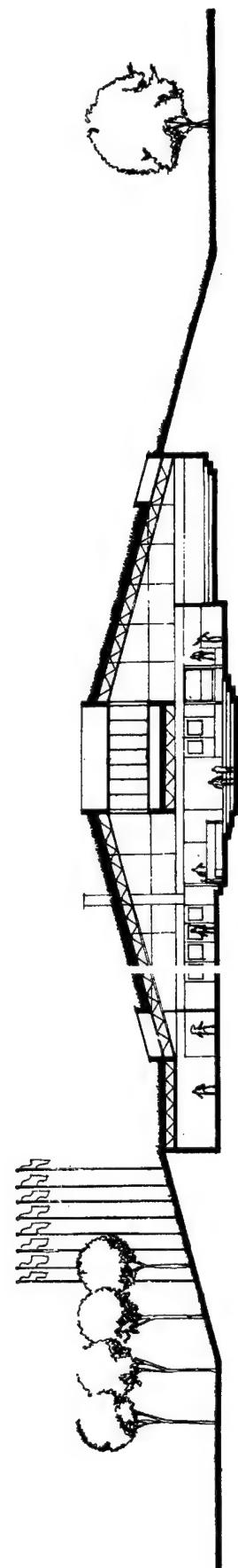
OUTDOOR ACTIVITY

- 20 Terrace
- 21 Entry Court
- 22 Parking
- storage
- lounge
- fireplace lounge
- fl

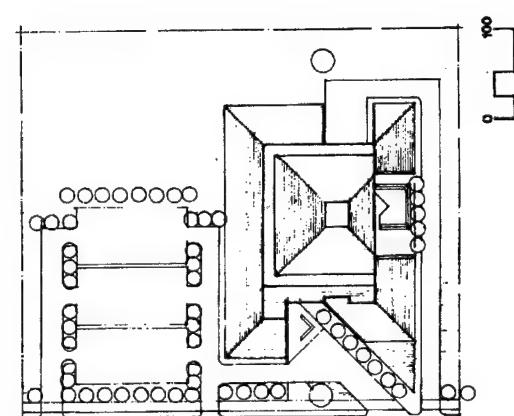
Figure 6-6 Elevation & Section 19,800 SF Center



Elevation



Section



Site Plan

6-4 27,800 SF CENTER

a. **SITUATION.** The post is located on the west coast near a large metropolitan area which offers a number of off-post recreational facilities for outdoor activities such as surfing, skiing, and back-packing as well as typical urban activities such as the theater, restaurants, and night life. The military population consists of over 10,000 men (6,000 enlisted men), which includes 50% permanent party personnel and 50% basic trainees.

A new main Recreation Center will be built between two training commands in an area that has theaters, libraries, and swimming pools, but does not have post exchange restaurant facilities located in the vicinity. The objective of the Center is to relieve overcrowding of two Branch Centers which suffer from a lack of space and over-use during the weekends by trainees.

The site is located on the crest of a hill overlooking the rest of the Center and the Pacific Ocean to the south and west. The climate is mild with a normal temperature range of 48° F - 72° F winter to summer, with extreme temperatures at 29° F and 98° F. Annual rainfall is 18.02 inches and no measurable snow. Winds are westerly at an average of 20 mph. There are 134 clear days per year, 132 partially cloudy days, and 68 rainy days per year. The noon solar angle is 76°-30' on the summer solstice and 28°-30' on the winter solstice.

b. **CURRENT USAGE.** The projected use of the Center is high. The current Centers handle approximately 200 people per hour during the weekends; it is projected that this trend will continue, with Center use heaviest during the weekends, averaging 1500 to 2500 people per day when the trainees use the Center.

During the weekdays the Center is normally used by the permanent party personnel; usage is down to about 300 to 500 per day. The projected high usage of the building indicates that there will be extreme problems with control, noise, congestion, and maintenance. Since the trainees present a problem with drinking, the results of a poll of permanent party personnel indicate that they would prefer

that beer and wine not be served at the Center.

c. **PLANNED ACTIVITIES AND PROGRAMS IN THE NEW CENTER.** The Center staff wants to provide a full range of regular programs and increase the number of large group programs that involve both the permanent and trainee groups while still recognizing some incompatibilities of the two groups.

(1) **Administrative.** There are five full-time staff members involved in administrating Recreation Programs. At this Center, ITT will be a full-time activity which involves distributing tickets for on- and off-post events as well as arranging group travel and outings and making accommodations at nearby military campgrounds,

(2) **Large Group.** These activities are planned to accommodate the two different using groups, permanent party personnel and trainees. On weekends, the emphasis is on socials that include dancing, rock and folk entertainers and ethnic festivals; the attendance at these events is projected to be approximately 500 people. During the weekdays, the programs are geared to the permanent party personnel with films, socials, demonstrations, card tournaments, and organized games; the attendance is expected to range from between 100 to 250 people. Also, there may be unit parties which will have between 100-300 participants; these will occur during the week. There is some indication that if the activities are located in a better facility, there will be an increase in participation.

(3) **Small Group.** These activities now comprise the bulk of planned program activities taking place in the Center. The most popular activities are billiards, informal combo practice, record and tape listening, and TV viewing. Billiards normally attracts about 75 people with an equal number using electric games (pinball, electronic tennis, air hockey); this popularity will continue in the new Center but will not increase because of the new activities being planned.

TV viewing involves about 100 people per night; it is believed that this would be reduced if participation in other activities could be

encouraged. There is a rap session held twice weekly and normally involving 50 people; smaller sessions also occur. The spontaneous informal use of musical instruments is very popular; there are at least two sessions nightly involving about 20 people; this should remain constant. A minimum of 30 requests are received nightly for ear phones or recording equipment.

(4) *Special Interest.* These activities include the following: women's groups (60); Chess Club (60); Skiing Club (80); Scuba Club (40); and Coffee House for social awareness (70).

(5) *Refreshment.* These activities center around an 84-seat snack bar with electric game area, as recommended by AAFES.

d. **SPACES REQUIRED.** The following spatial requirements have been derived from existing and planned Center activities and programs:

(1) *Administrative.* Recommended in chapter 4 for five full-time staff,

(2) *Large Group.* Central program area sizing is complex because of different sizes of groups handled weekends and weekdays. The weekend social would require about 4,500 SF maximum. The solution must be to develop a central program area as a large space with several adjoining lounges that can be used to hold people socializing during dances and other activities during weekdays. The central program space should accommodate 300 with adjoining lounge space for 100.

$$300 \times 10 \text{ SF} = 3,000 \text{ SF}$$

$$100 \times 15 \text{ SF} = 1,500 \text{ SF}$$

$$\text{TOTAL} \quad 4,500 \text{ SF}$$

(3) *Small Group.* As Centers become larger, less and less overlap occurs with small group spaces. Individual space requirements in Chapter 4 govern:

- 2 enclosed multipurpose spaces for 30 people involved with private meetings, music, taping of music, etc. (150 SF each)
- 1 open multipurpose space for 30 people involved in quiet activities (150 SF each)
- 2 enclosed spaces for 10 people involved in noisy activities (150 SF each)
- 1 open space for 10 people involved in card playing (150 SF each)

12 carrels for letter writing, record and tape listening, music taping, and other individual activities (30 SF each)

24 jack locations in lounge areas

1 active game area for 2 pingpong tables, 8 billiard tables, 4 air hockey machines, and 10 pinball machines (3,785 SF)

(4) *Special Interest.* Separate space is required to accommodate 60 people involved in activities or meeting space for 50 people (1200 SF).

(5) *Refreshment.* Since there is no full-scale food service nearby, there is a need for one to be incorporated into this Center.

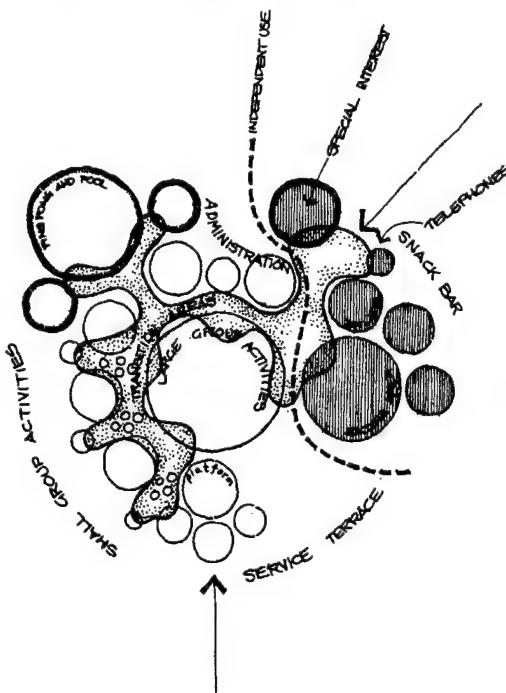


Figure 6-7 Spatial Diagram 27,800 SF Center

e. SUMMARY OF SPATIAL REQUIREMENTS

Table 6-3. Spatial Requirements 27,800 SF Center

Administrative Spaces	
Information Tour & Travel	170
Control	400
Administrative Offices	775
Storage	400
Large Group Spaces	
Central Program Space	4,500
Platform	750
Dressing, Storage, Loading	1,200
Small Group Spaces	
Pantry	250
Telephones	300
Carrels (12)	360
Open Multipurpose (small) [1]	150
Open Multipurpose (large) [1]	600
Enclosed Multipurpose (small) [2]	300
Enclosed Multipurpose (large) [2]	1,200
TV/Meeting	1,250
Active Games	
Pingpong	500
Billiards	2,000
Electric Games (not AAFES)	1,285
Special Interest	1,200
AAFES Snack Bar & Games	3,450
Lobby	500
Service Spaces	
Public Toilets	650
Janitor's Closet	50
Net Total	22,240
Transition Space + Net to Gross @ 25%	5,560
TOTAL (Excluding Mechanical Space)	27,800

f. DESIGN SOLUTION. This scheme is oriented outwardly toward the views of the bay from the site; it incorporates a large outdoor terrace that serves the central program space and the snack bar as an overflow area as well as houses many outdoor activities. The mild climate of the area allows the building design to incorporate large areas of glass, especially on the southern and northern facades, and to use skylight monitors to provide daylight in the interior spaces of the building.

Because of noise problems, a dispersed spatial organization is developed to isolate the noisy areas and buffer the open spaces. The active game area is separated from the open central space by the enclosed small group activity spaces, which serve as sound barriers as well as enclose noisy activities. The snack bar and active games area are separated to reduce noise conflicts and functional and administrative problems.

The snack bar, special interest area, ITT, and telephone lounge are located in close proximity to the lobby and restrooms because they function during hours when the remainder of the Center is not open. Through the use of rolling security screens mounted in the ceiling, these areas can be isolated from the rest of the Center.

The central program space is designed as a large depressed central area for dancing, exhibitions, and seating, with raised circulation space surrounding it, and lounges and presentation platforms adjoining it. The dance area is ringed with built-in seating steps that function as informal seating during dances or demonstrations. Circulation to the dance floor is provided by a series of ramps which enclose the fireplace lounge; this serves a special functional purpose by accommodating the special needs of the physically handicapped and incorporating it as an integral and important element of the design. The platform area of the central space is at the same level as the main Center floor to facilitate the movement of heavy equipment from the platform and storage areas to other parts of the facility.

TV viewing areas are separated to reduce conflicts between those watching different shows and shaped to provide the best viewing angles.

g. TECHNICAL SOLUTION. Because of the number of people using this building and its size, its construction has to be fire-resistant and non-combustible. Based on the economic analysis at the time of design, the most cost-effective construction would be poured-in-place concrete structural system with exposed waffle slabs used throughout the building.

Figure 6-8 Plan 27,800 SF Center

27,800 SF Center

KEY

TRANSITIONAL ACTIVITY

- 1 Circulation/Lounge Space
- 2 Lobby

LARGE GROUP ACTIVITY

- 3 Central Program Area
- 4 Platform
- 5 Pantry

SMALL GROUP ACTIVITY

- 6 Active Game Area
- 7 TV Lounge
- 8 Table Game Area
- 9 Open Multi-Purpose Area
- 10 Enclosed Multi-Purpose Area
- 11 Telephone Lounge
- 12 Carrels
- 13 Special Interest Area

ADMINISTRATIVE ACTIVITY

- 14 Control Center
- 15 Administrative Offices
- 16 ITT

REFRESHMENT ACTIVITY

- 17 Snack Bar
- 18 Electric Game Area
- 19 Kitchen

SERVICE ACTIVITY

- 20 Mechanical
- 21 Public Toilets
- 22 Janitor's Closet

OUTDOOR ACTIVITY

- 23 Terraces
- 24 Entry Court
- 25 Parking

3 storage

rs removable storage

1 lounge

fl fireplace lounge

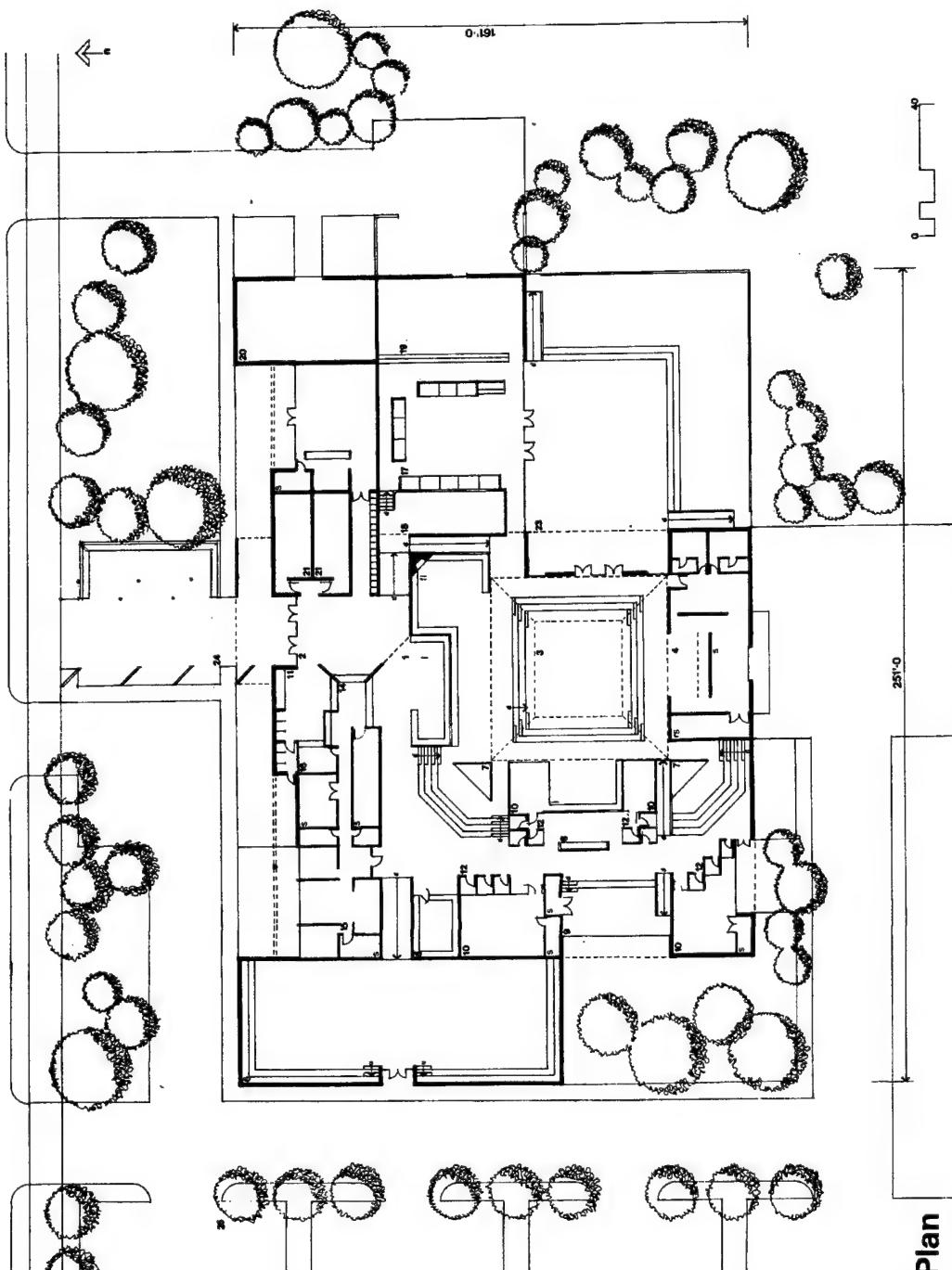
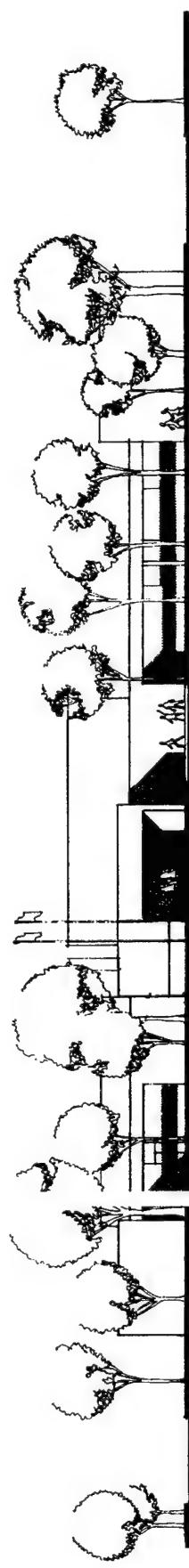
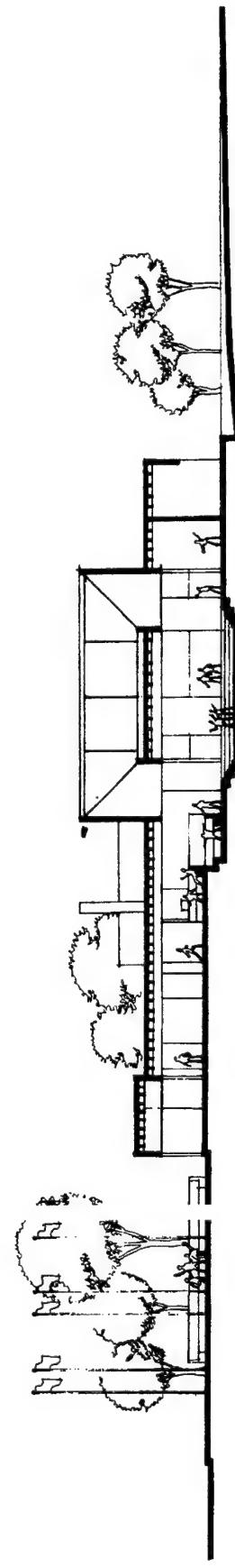


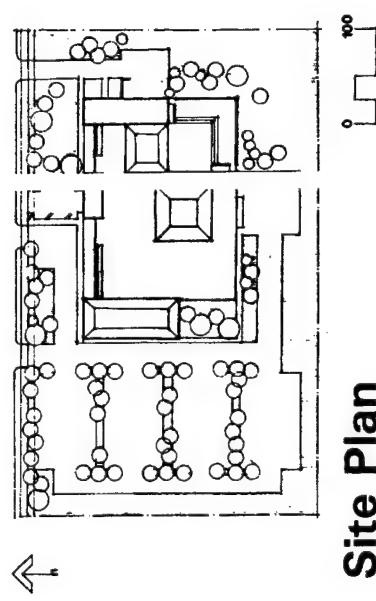
Figure 6-9 Elevation & Section 27,800 SF Center



Elevation



Section



Site Plan

6-5 FOUND SPACE

The following illustrates a case study of what can be done if there is not enough money available to construct a new Recreation Center and if there is an existing building not currently in use which could possibly house a Center. It should be stressed that this is an illustrative example and that the local situation and needs will govern the outcome of this type of endeavor. The purpose of this example is to outline a procedure that should be followed and to illustrate a potential design for a hypothetical building.

a. **EVALUATING FOUND SPACE.** To evaluate the suitability of an existing structure for reuse as a Recreation Center, the following criteria, in order of importance, must be fulfilled:

- (1) The structure should be permanent,
- (2) It must be located in proximity to housing, transportation, other recreation services, and PX facilities.
- (3) It must be large enough to house a full range of programs; this will vary depending upon installation population, successful programs, and existing equipment.
- (4) The site should be on a main circulation artery having post routes and have enough space for parking a minimum of 40 cars.

In addition to these criteria, the building must have the following critical features: a large space suitable for a central program area;

adequate utility service for loads outlined in Chapter 2; and a suitable physical condition to enable economical remodeling. Another desirable feature is a building which has a totally open interior, providing greater flexibility and ease of remodeling.

b. **PROGRAMMING FOUND SPACE.** Once the building has been determined to be suitable for use as a Recreation Center, a space requirements list is developed. There is a significant difference between developing found space requirements and developing new space requirements. Found space must conform to the structural, spatial, and environmental service limitations of the existing structure and the budget limitations for remodeling as well as being responsive to the recreation program and activities of the Center. Therefore, before planning can begin, a budget and survey drawings must be developed.

(1) **Budget.** The availability of funds for remodeling will have a great impact on planning by limiting the modifications that can be made to an existing structure. For example, if limited funds are available, the Recreation Center programs including activities, people, and equipment would have to fit into the building spaces as they exist without improvements. If sufficient funds were available, interior demolition and complete remodeling could take place, fitting the building to the Recreation Center program. Therefore, a realistic determination of funds must be developed.

(2) **Survey Drawings.** To plan the Center, an accurate survey of the building should be available which indicates the sizes of existing spaces and the structural and environmental systems of the building. The budget for the project will be determined by what has to be done to the building to make it usable to house the recreation program within the constraints of the available funds. The priorities of the Recreation Center program have to determine what modifications are most important, and what are the least important. For example, if the program planning indicates that the most important space requirement is a large central program area and the existing building requires

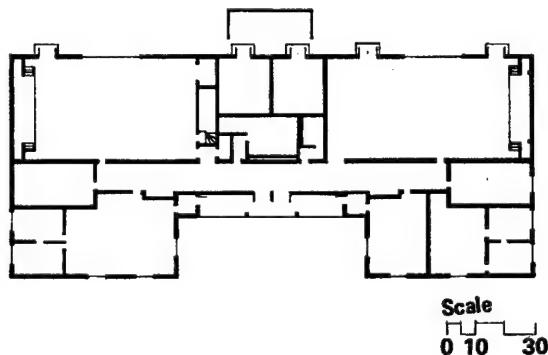


Figure 6-10 Plan Found Space Building

extensive modification to accommodate this need, this requirement should take precedence over other less important changes and would be included in the construction within a limited budget.

The planning of the Recreation Center program should follow the same procedure as outlined in Chapter 2, and should be guided by the criteria and principles stated in Chapters 4 and 5. The difference is that many of the space requirements will have to be modified to meet the constraints of the existing structure. However, the design of a Found Space Center should have the same design objectives of new construction – it should maximize social interaction and the patron's freedom of choice to pursue interests and activities.

c. **SITUATION.** The installation is located in the southeastern part of the country and has a military population of 4,401 permanent party personnel. An existing Center is located in a temporary building which has serious structural faults. The post commander has decided that the Recreation Center should be located in one of the several permanent buildings not currently being used.

d. **CURRENT USAGE.** The Center now being used has approximately 125-175 people in attendance during weekday peak activity hours. When there are large group events, the attendance may include as many as 400 patrons.

A full range of regular programs is provided at this Center. In addition, there is growing participation in special interest programs; however, these do not represent a major part of the Center's activities.

The Center is operated by two full-time recreation professionals. It is anticipated that the Center usage will remain fairly constant when the Center is moved to the found space, which is approximately the same size as the existing Center.

e. PLANNED ACTIVITIES AND PROGRAMS.

(1) **Administrative.** The two staff members are involved in planning and supervising the programs of the Center. While one is involved in

the programs in the Center, the other staff member operates the Control Center and ITT.

(2) **Large Group.** There are usually four planned weekly group functions; attendance is anticipated to range from 200-250 people in the Found Space Center. These activities are Friday night dances, Saturday night socials, Sunday night films and popcorn, and Wednesday night bingo. The Center will be used occasionally for Commander's Calls with approximately 50 people in attendance, and for unit parties of about 200 people.

(3) **Small Group.** The Center currently has 4 billiard tables and one pingpong table; because of budgetary reasons, it has been decided not to add any more game equipment in the Center. It has been anticipated that approximately 30 people will watch TV during a normal evening. Recorded music and drama listening has been a popular activity. Informal combo practice is a popular activity occurring frequently. It usually consists of from 1-6 persons practicing with approximately 5-10 onlookers. Sometimes patrons tape such activities or tape program speakers; an in-house audio/taping system enables this process.

(4) **Special Interest.** Among the special interest activities scheduled twice weekly are the gourmet cooking club with 15 members and coin collecting club with about 40 members. It is felt by the members and staff that they could use an enclosed multipurpose space for their meetings. In addition, there are classes of 10-40 people that meet as a particular subject becomes popular or interesting.

Based on the current and planned activities and requirements, an existing building consisting of 11,850 SF was determined as the building most suitable for the Center; it has two large spaces of 2000 SF each. Funds were available for some remodeling and interior demolition.

f. SPACES REQUIRED.

(1) **Large Group.** A central program area is the most critical space requirement. To adequately house the local recreation program, it has to accommodate 200 people for films and 250 people for dances.

$$200 \times 8 \text{ SF/person} = 1,600 \text{ SF}$$

$$250 \times 15 \text{ SF/person} = 3,000 \text{ SF}$$

The largest existing space is 2,100 SF. This is considered to be large enough if an adjoining lounge area is provided by demolishing some interior partitions.

(2) **Small Group.** A pool room is the most critical space for small group activities, which must be at least 22' wide to permit shooting without interference and be large enough to house 4 tables, or 1,000 SF. If pingpong is included, this would require an additional 2 tables, or 500 SF. The resultant space would have to be 26' x 57' for two rows of tables.

(3) **Other.** The other critical spaces would be a large enclosed multipurpose room for combo practice, meetings, or other activities, and a TV lounge for 30 viewers. The remaining spaces can be adapted from Chapter 3 to fit the structure after the above activities are housed.

g. SUMMARY OF SPATIAL REQUIREMENTS

Table 6-4. Spatial Requirements Found Space

	Administrative Spaces	
Control	275	
Administrative Offices	400	
ITT	25	
Storage	300	
Large Group Activities		
Central Program Space	2,100	
Platform (to be part of the central program space)		
Storage, Dressing, Loading	500	
Small Group Activities		
Pantry	250	
Telephones	100	
Carrels (3)	90	
Enclosed Multipurpose (small)	150	
Enclosed Multipurpose (large)	600	
Open Multipurpose	600	
TV/Meetings	600	
Active Games		
Billiards	1,000	
Pingpong	500	
AAFES Vending & Games		
Lobby	350	
Service Spaces		
Public Toilets	450	
Janitor's closet	50	
Net Total	9,190	

Transition Space + Net to Gross @ 25% 2,300

TOTAL (Excluding Mechanical Space) 11,490*

*Because of the complications involved in fitting a program into existing space, additional square footage may be required.

h. DESIGN SOLUTION. The existing building lent itself to remodeling with the following alterations:

The entry was relocated to the corner of the entry court so that it would be controlled from the information desk.

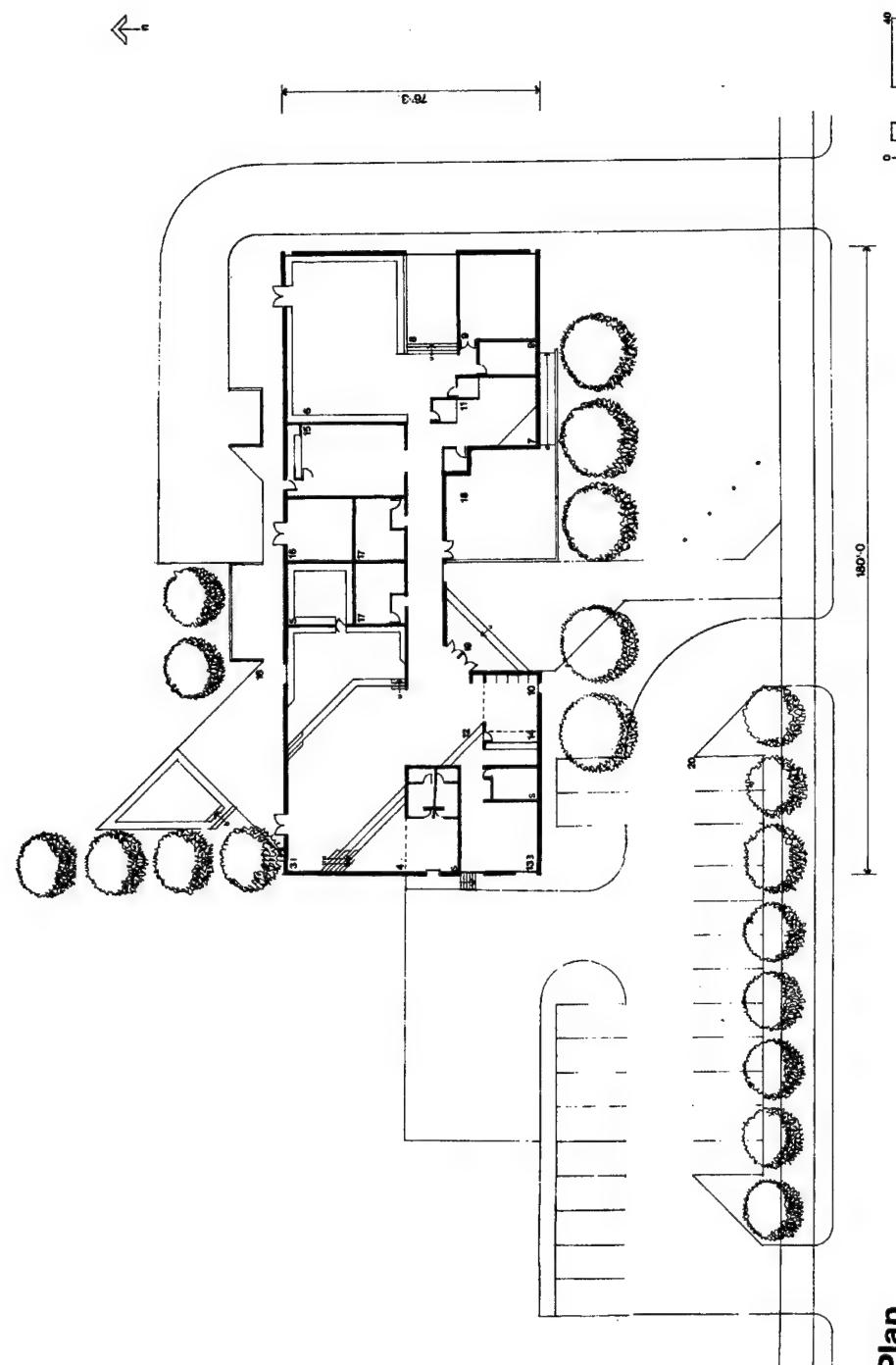
The overall planning of the Center was based on the existing linear scheme developed by two large spaces separated by a corridor. In the remodeling, one of these spaces became the central program area and the other the active games area. This enabled the two activities to be located using the existing mechanical space as an acoustical buffer between them. The corridor was developed as a transitional space linking the control desk, the central program area, and the active game area with the small group activities located in existing spaces along the spine.

For economic reasons, it was decided to spend most of the budget in developing an adequate large group space and to fit the small group activities into existing spaces. Therefore, the large open multipurpose area was located in an existing 450 SF space. Because the large group activities held at the Center are usually not oriented toward presentation-type events, it was deemed advisable to have a smaller platform than usual and to locate it in a corner to permit greater flexibility in the use of the central space. The central space was designed with a stepped-up platform that diagonally spans the space, breaking it up into smaller more intimate lounges without reducing the space's ability to house large group activities, such as dances and bingo.

The other large space was divided to house the active games and the AAFES vending machine area. Because of spatial restrictions, this less than desirable proximity was acceptable.

In order to make the Center's new location more visible to the installation's population, the exterior entry court is to be painted with supergraphics.

Figure 6-11 Plan Found Space Center



Plan

6-6 REMODELED SPACE

a. **SITUATION.** Since March of 1955, Recreation Centers (formerly Service Clubs) were built from standard designs. Reviewing the success of these designs, several inherent strengths and weaknesses are apparent. In response to the changing demands placed on these facilities, a remodeling program should be developed which would retain the good features and correct the problems of the standard designs.

Inherent design strengths are the segregation of conflicting activities, a minimum of circulation with independent access to all spaces, and maximum control of the Center from the desk.

Major weaknesses are the result of changing recreational attitudes and needs, which require that spaces be adaptable to new programs and activities as old programs are phased out. For instance, the original program for Service Clubs was based on events such as "big band" dances in which a large crowd of dancers and a number of musicians would use the auditorium space. Current recreational programs must accommodate a myriad of small group activities. New programs such as ITT and special interest, and new activities such as coffeehouse and rap sessions have particular spatial needs which were not originally considered in the standard designs. In addition to programming problems, certain technological and design deficiencies such as soundproofing and a negative institutional appearance are also evident.

Since not all Centers face the same problems and economic constraints vary, the planning of any remodeling should be based on the local Recreation Center programs, the needs of the patrons and staff, and the physical condition of the Center facility. The intent of this case study is to show a series of modifications that can change an existing Center, incrementally correcting some of the more common problems. While these examples are taken from the 27,800 SF standard design, similar renovations can also be made to other size Centers.

b. **REMODELING PROCEDURE.** Analyze the existing Center in terms of its capacity to house the desired programs. The following questions should be answered:

- What are the programs we want to run in the Center?
- Can the existing building support these programs?
- What is right with the existing building and should be retained in the remodeling?
- What is wrong with the facility and should be changed?
- How will these changes affect the social and recreational programming?
- How much money can be spent?
- Will it be accomplished at one time or in a series of small changes?
- What are the Center's priorities?
- Which problems have the most impact on the Center's social programming and should be corrected first?

From the answers to these questions a remodeling program can be developed which states the problems that must be solved and the justification for funds to solve these problems. To establish this program and justification for funds, the issue reports should be developed by the Center staff and patrons and organized according to their impact on the Center's operation. These issue reports should include:

(1) *A Supported Statement of the Problem to be Addressed*, i.e., there is too much noise, no space for special interest, no ITT, etc.

(2) *A Statement of the Specific Attributes of the Context in which the Problem Exists*, i.e., concurrent activities create serious noise problems in the current central program space; clubs are not forming and special interests are not being developed because there is no suitable space for meeting; there are no on-post travel and tour services available on the installation.

(3) *Changes Required to Correct the Problem*. A tentative statement of the solution to the problem to be further developed with engineering assistance; i.e., partition part of the ballroom to become a special interest room; provide sound insulation, sound absorptive materials, and solid core wood doors in noisy areas; provide an ITT desk in the lobby taking advantage of excess utility space.

(4) *A Statement of the Evidence Required.* Evidence to support the importance of the problem, the accuracy of the context description, and the appropriateness of the solution, i.e., indications of patron interest or concern about the problem, indications of mission or life safety impacts, etc.

(5) *Costs.* The using service should seek professional assistance to review changes and their cost implications from the District Engineers to develop a realistic budget for the project.

(6) *Priorities.* According to the impact on the Center's social programming the list of problems, contexts and solutions should be tabulated according to the priorities. For example, the noise problem affects all aspects of the Center's functioning including the proposed special interest space; therefore it should have a high priority and be accomplished first.

(7) *Phasing.* Timing and sequence problems should be considered and listed, such as must the Center be closed during the alterations, and is there a sequence of construction operations which must be followed to allow the Center to function during the remodeling?

c. **CHANGING THE CENTER.** As an aid, this guide can be used to demonstrate what should happen in a Center and provide ideas and criteria for making changes for remodeling. The following shows what can be done with the existing Center to incorporate some of these ideas as an example. The planning and design of the remodeling for a particular Center must be based on local problems and needs.

Based on the severity of the problems, priority for change, and availability of funds, the Center can be changed in several ways; it can be redecorated, which requires a minimum of construction and usually implies the use of applied materials to make changes and can only affect the Center minimally. To change the Center significantly, the Center can be remodeled, which requires adding new construction and changing the existing construction; this affects the Center maximally. The following responses contain both recommendations.

Design Guide: Recreation Centers – Case Studies – January 1976

Problem 1: Each space is required to handle too many incompatible activities. The design does not support any activity because it is too flexible and lacks the necessary features to define the space and its intended and potential uses.

Response: Use this guide to evaluate the current recreation program, set new space allocations, and compare them to the 1955 design standards. Table 6-5 demonstrates such a comparison.

Table 6-5. Comparison of 1955 Standard Design and Design Guide Criteria, 27,800 SF Centers.

Administrative Spaces	1955	DG
ITT	0	150
Control Center	770	800
Administrative Offices	725	775
Large Group Spaces		
Ballroom	6,080	0
Central Program Space	0	4,635
Stage	1,435	0
Platform	0	750
Dressing, Storage, Loading	1,738	1,200
Small Group Spaces		
Pantry	80	250
Telephones	198	300
Carrels	0	360
Music Room	650	0
Open Multipurpose	675	750
TV/Meeting	650	1,250
Active Games	1,767	3,670
Reading/Writing	1,610	0
Special Interest	0	1,200
Enclosed Multipurpose	0	1,200
AAFES Snack Bar and Games	3,934	3,450
Lobby		
Service Spaces		
Public Toilets	983	650
Janitor's Closet	122	50

Establish a new space-use program based on the evaluation.

- Which activities have similar requirements and can overlap?

ž Which have to be separated?

ž Which activities don't have a supportive environment?

ž What modifications have to be made?

Significant changes can be made without remodeling by relocating activities and using furniture and wall and color treatments to divide large spaces. Also, by using movable space dividing screens, plants, and other open office planning techniques, the effectiveness of the space can be increased.

Further changes require remodeling of the facility, such as the addition of carrels, small built-in lounges, built-in seating, or the enclosure of noisy activities.

Problem 2: The large ballroom is dysfunctional because it is too large for most programs; it is out of scale when not filled with people and has poor lighting.

Response: The most effective changes to this problem can only be brought about by remodeling; however, some significant changes can be made by redecorating.

Redecorate: Decrease the apparent size by

dividing the space into activity areas using movable screens, large floor and hanging plants; suspending lightweight panels from the ceiling, such as plywood disks, stretched fabric panels, or banners and flags. These suspended panels can be used horizontally to reduce ceiling heights or vertically to decrease room size. Activity areas can also be created by the paint and color scheme.

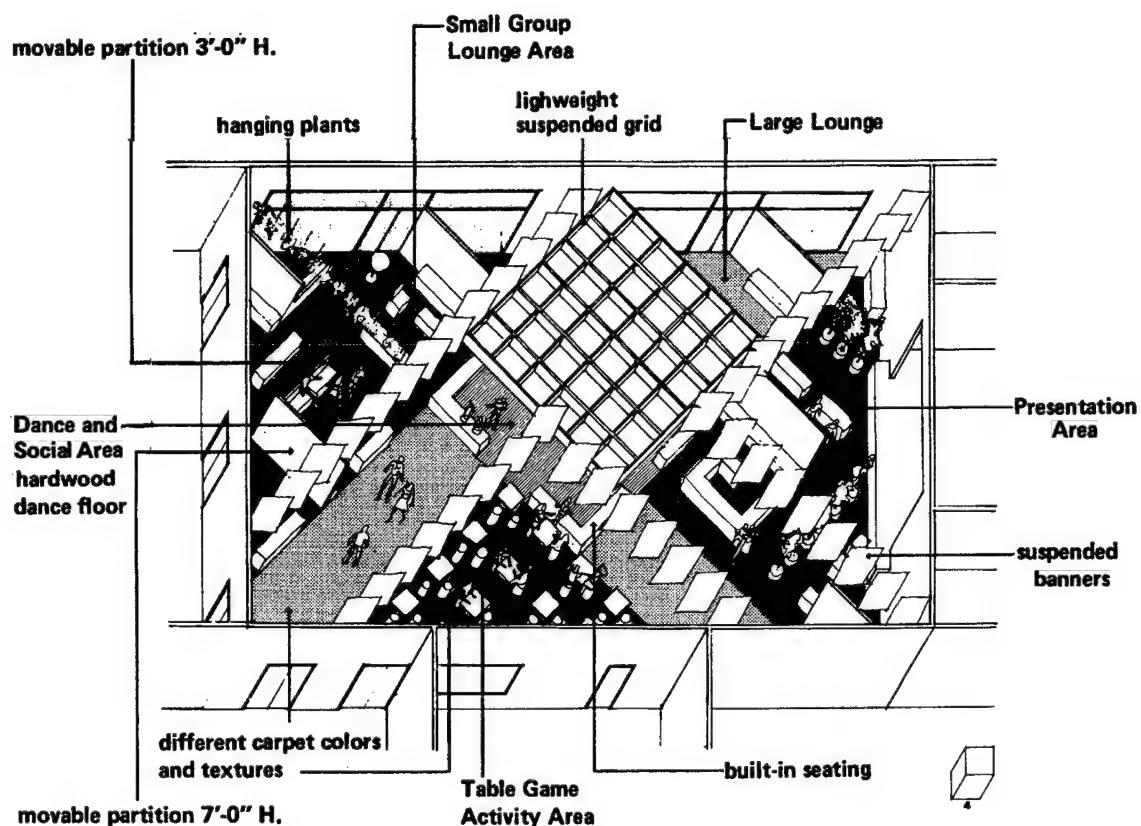


Figure 6-12 Redecoration of Ballroom to Decrease Its Apparent Size

Remodel: Break down the space by adding small group activity spaces, by using raised areas, half-height partitions, built-in seating for lounge and game-playing areas.

Project the stage into the central space with stepped platforms and reduce its size; use the existing stage for storage; use the existing storage as a pantry.

Drop panels from the ceiling to define lounge areas and reduce scale.

Develop stem-mounted, multi-circuit lighting track system for flexible lighting. Reduce the number of ceiling mounted light fixtures.

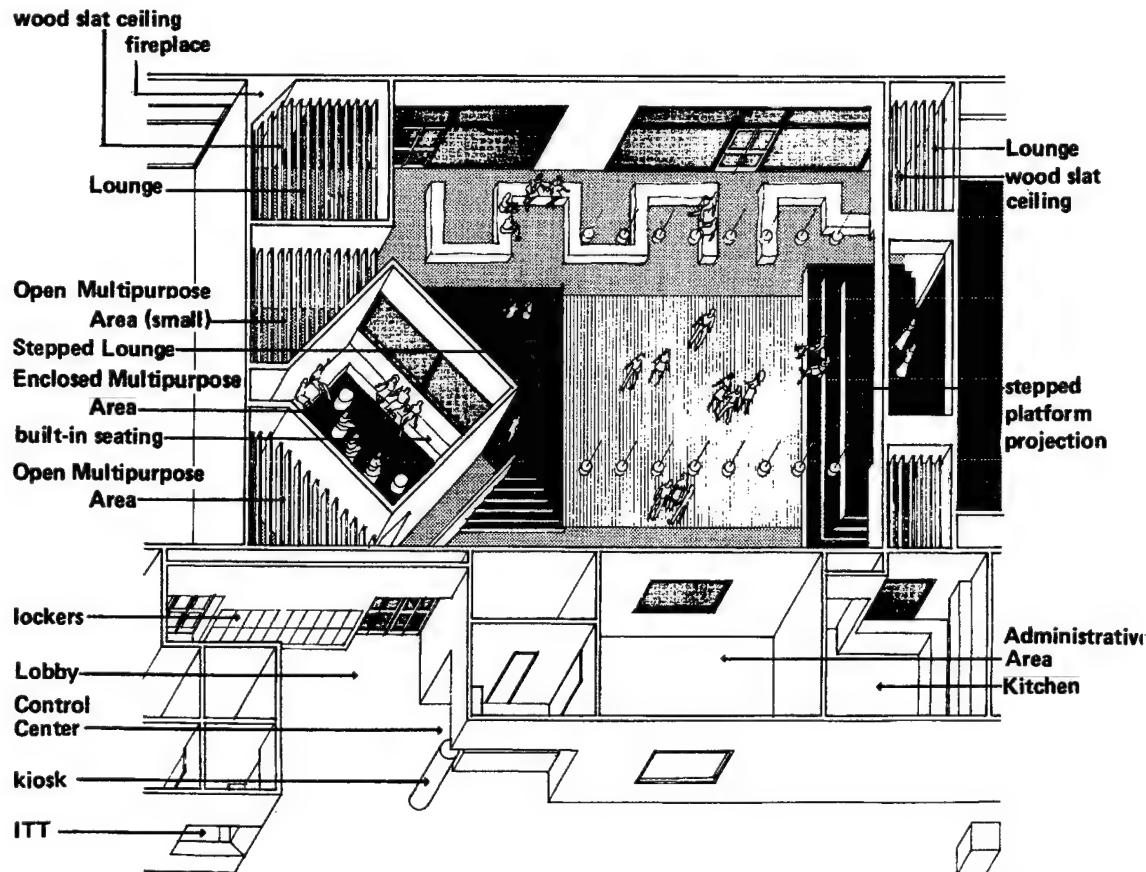


Figure 6-13 Remodeling of Ballroom Into a Central Program and Small Group Activities Areas

Problem 3: New programs have been added after plans were developed and do not have space allocated to them.

Response: Redecorate: Change the function of spaces: the quiet reading room could become a Special Interest room if a storage wall and counter are added. Add functions to existing space: a free-standing ITT office and lounge could be developed in the lobby space.

Remodel: Reduce the size of the ballroom and use the remaining space for new programs.

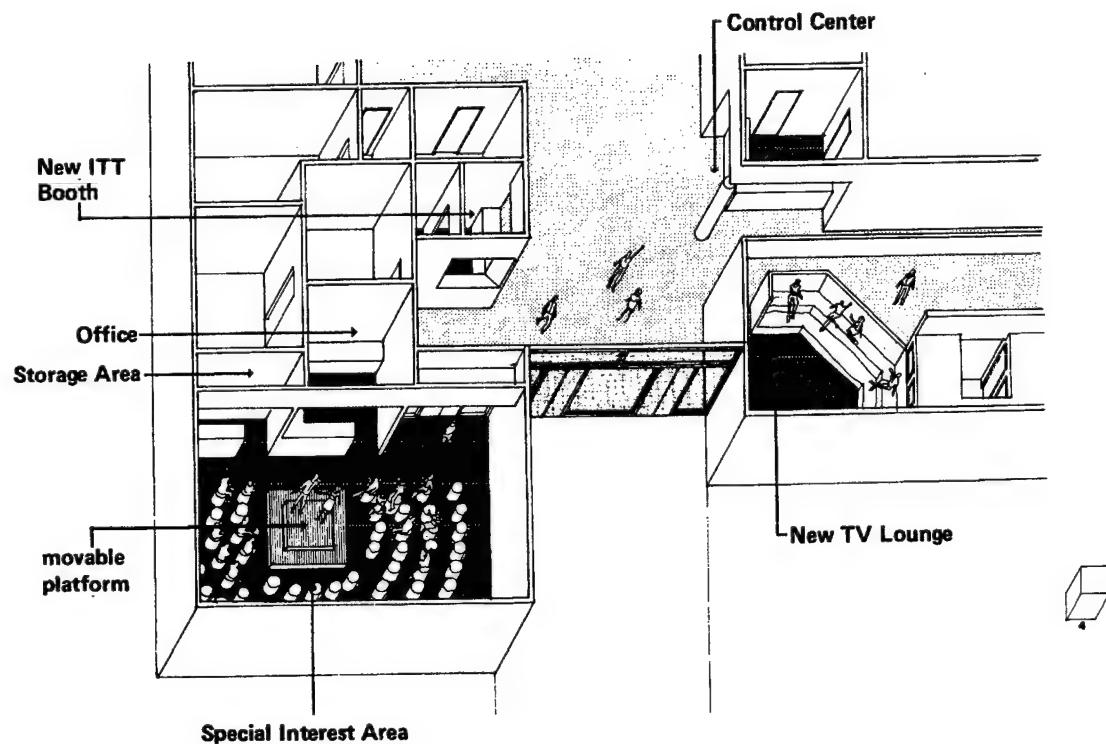


Figure 6-14 Renovations for Special Interest Room, TV Lounge and ITT Booth

Problem 4: The existing Center has an institutionalized appearance; the image of the Center should be informal, non-military, and provide a change of pace from the duty environment. This institutionalized appearance is conveyed by the Center's large spaces, long corridors, use of materials, color schemes, uniform lighting systems, and lack of identity markers.

Response: Redecorate: Change paint schemes by asking soldiers to indicate preferences of colors from TM 5-807-7. Don't use wainscot treatment; change interior finishes.

Cover exposed block walls with different material – i.e., fabric panels, gypsum wallboard, paneling, vinyl wall covering, or carpeting on floors. This will also reduce the sound level.

Create a Center identity by employing a distinctive and unified graphic treatment using the Center's name or logo or supergraphics to indicate space identification or intended use.

Remodel: Redesign the lighting system to be more activity-oriented with changes in light level rather than the existing uniform scheme. Use special lighting effects and dimmers; this would also conserve energy.

Develop new spatial configurations by using built-in furniture and low partitions to define the spaces; demolish walls, introduce level changes, drop ceiling panels, and reorganize circulation system.

Problem 5: Because of the hard surfaces throughout the Centers, the building lacks sound absorption qualities, creating a tremendous acoustical problem. Additional problems exist because this sound is transmitted between spaces.

Response: The solution to the problem is two-fold: absorb as much sound as possible in the space where it is generated and prevent sound from escaping into other spaces.

Redecorate: Separate conflicting activities by locating other activities between them.

Add absorptive materials where possible, such as fabric acoustical wall panels, fiberglass sound absorption panels in active game areas and enclosed multipurpose space; carpet floors; add sound baffles to ceiling; change doors to solid core wood doors with sound insulating seals; seal cracks between spaces.

Remodel: Enclose noisy activities with sound-proof walls which would have a sound transmission rating of +40 dB or greater and with a sound barrier installed above the ceiling and coincident to the partition. Install acoustical tile ceilings in noisy areas with an NCR equal to .85 and STC equal to 35 dB or greater. Where possible, erect sound baffles at doorways of noisy activity spaces.

Eliminate openings between spaces where possible, such as louvers, return air grilles, etc., install sound baffles in ventilating system.

Design Guide: Recreation Centers – Case Studies – January 1976

Problem 6: The exterior design of the building fails to attract people into the Center.

Response: The solution is to increase the passerby's awareness of the Center and the activities taking place within. To do so, the Center's exterior should be made as distinctive and attractive as possible.

Redecorate: Landscape site around Center with plantings. Paint Center with an attractive and distinctive color scheme. Install signage to announce events and activities.

Remodel: Develop a landscaped entry court with trees, benches, and integrated lighting as outlined in Chapter 4-8.2.

Problem 7: The Centers lack any meaningful outside social spaces and recreational areas.

Response: Redecorate: Install plantings around existing patio to extend it visually. Add new seating areas that use loose paving materials, such as gravel and tan bark. Install outdoor seating arranged in small groups.

Remodel: Based on an analysis of the site and local climatic conditions, the existing concrete patio can be remodeled and enhanced through the addition of a terraced outdoor platform, low walls, planters, tree pits, and built-in outdoor benches. Materials other than plain concrete, such as brick or stone pavers, exposed-aggregate concrete, tan bark, and railroad ties should be used if local climate and economics permit. The outside recreational areas should conform to Chapter 4-8.1 of this design guide.

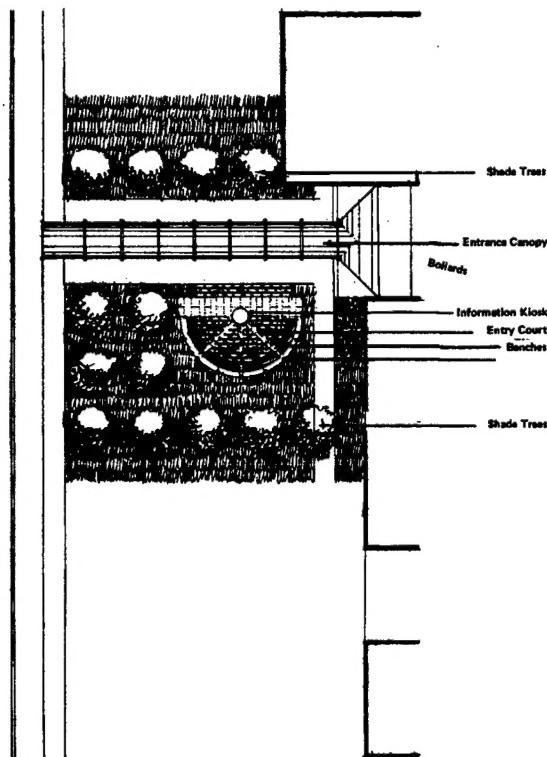


Figure 6-15 Entry Court Redesign

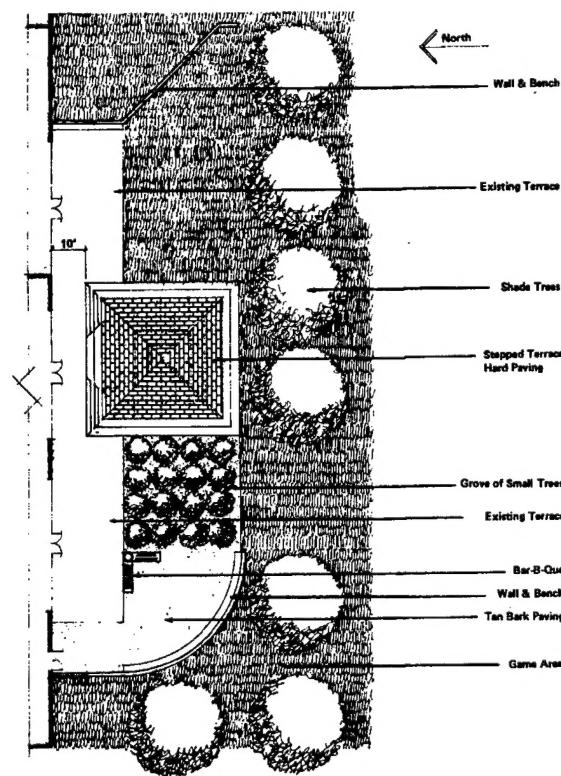
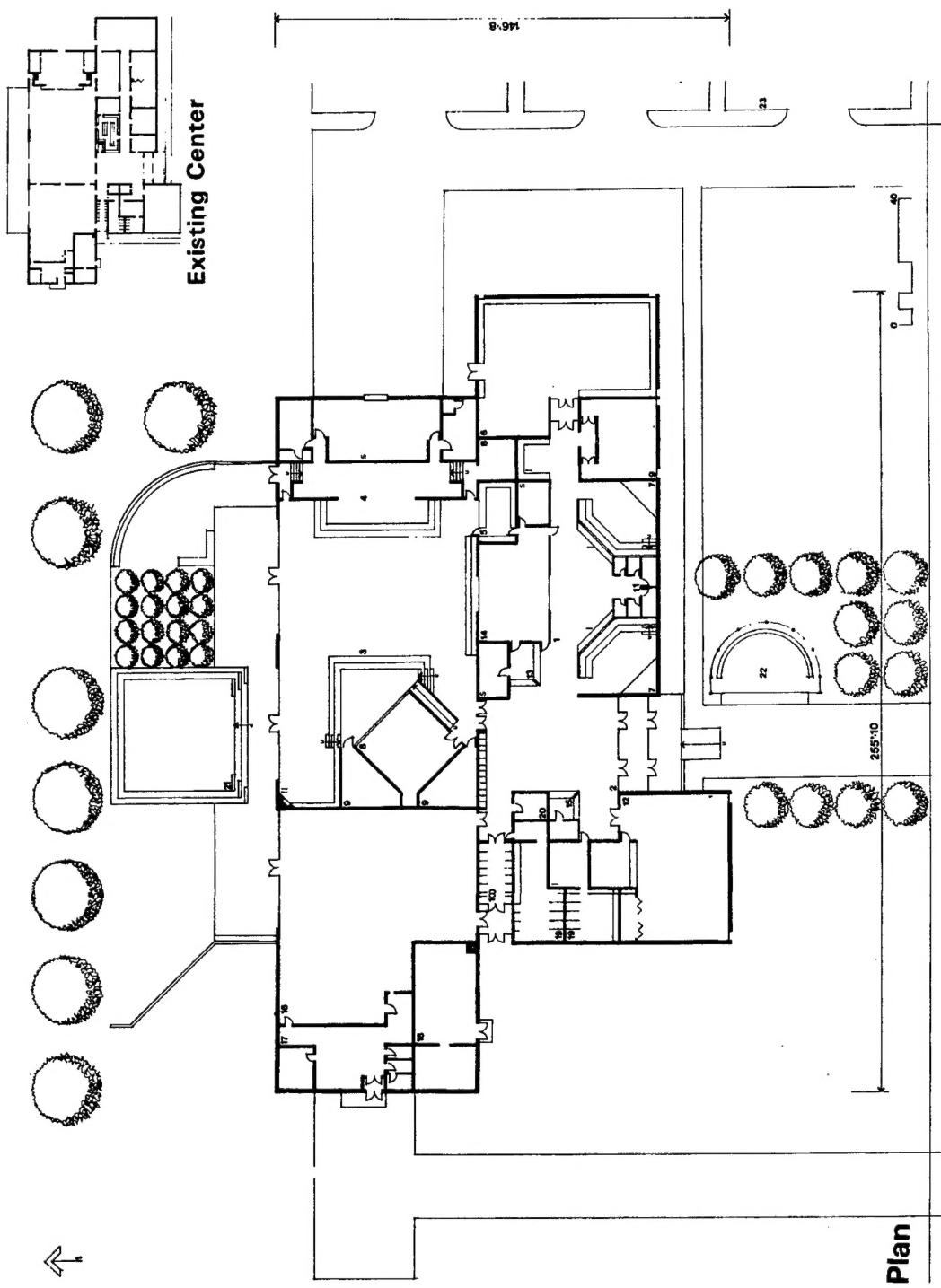


Figure 6-16 Terrace Redesign

Figure 6-17 Remodeled Center



REMODELED CENTER

KEY

TRANSITIONAL ACTIVITY

1 Circulation/Lounge Space
2 Lobby

LARGE GROUP ACTIVITY

3 Central Program Area
4 Platform
5 Pantry

SMALL GROUP ACTIVITY

6 Active Game Area
7 TV Lounge
8 Table Game Area
9 Enclosed Multi-Purpose Area
10 Telephone Lounge
11 Carrels
12 Special Interest Area

ADMINISTRATIVE ACTIVITY

13 Control Center
14 Administrative Offices
15 ITT

REFRESHMENT ACTIVITY

16 Snack Bar
17 Kitchen

SERVICE ACTIVITY

18 Maintenance – Mechanical
19 Public Toilets
20 Janitor's Closet

OUTDOOR ACTIVITY

21 Terrace
22 Entry Court
23 Parking
storage
lounge
fireplace lounge

Plan